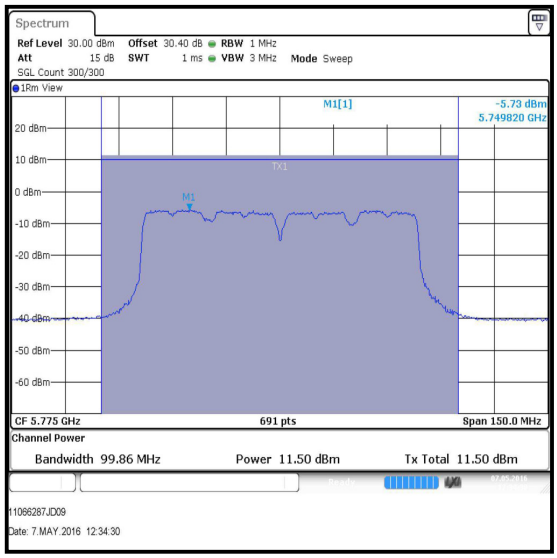
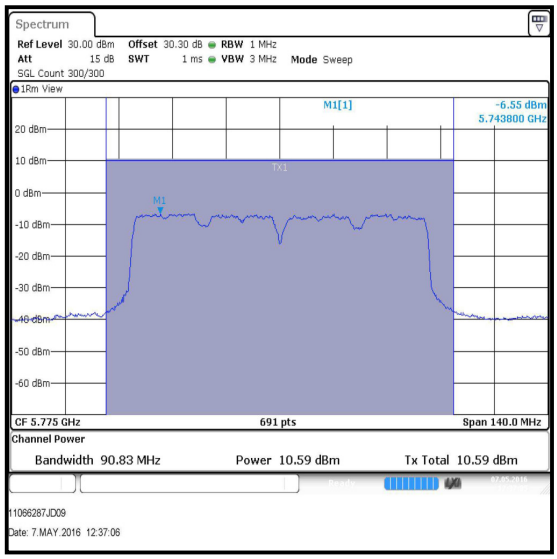
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Port 1



Single Channel

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Port 2



Single Channel

Transmitter Maximum Conducted Output Power (continued)

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1873	Signal Analyser	Rohde & Schwarz	FSV30	103074	03 Jul 2016	12
M1867	Attenuator	Huber + Suhner AG	6820.17.B	07101	Calibrated before use	-
A2847	Attenuator	Radiall	R411.820.121	24671450	Calibrated before use	-
A2345	Attenuator	Macom	2082-6043-20	None stated	Calibrated before use	-
A2952	RF Switch	Pickering Interfaces	64-102-002 & 40-881-001	XZ340281 & X311198	Calibrated before use	-
S0538	DC Power Supply	TTi	PL154	250135	Calibrated before use	-
M1269	Multimeter	Fluke	175	90250210	13 May 2017	12
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24

5.2.6. Transmitter Maximum Power Spectral Density

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Date:**	28 April 2016
Test Sample IMEI:	357232070003098		

FCC Reference:	Part 15.407(a)(1)(iv)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	28

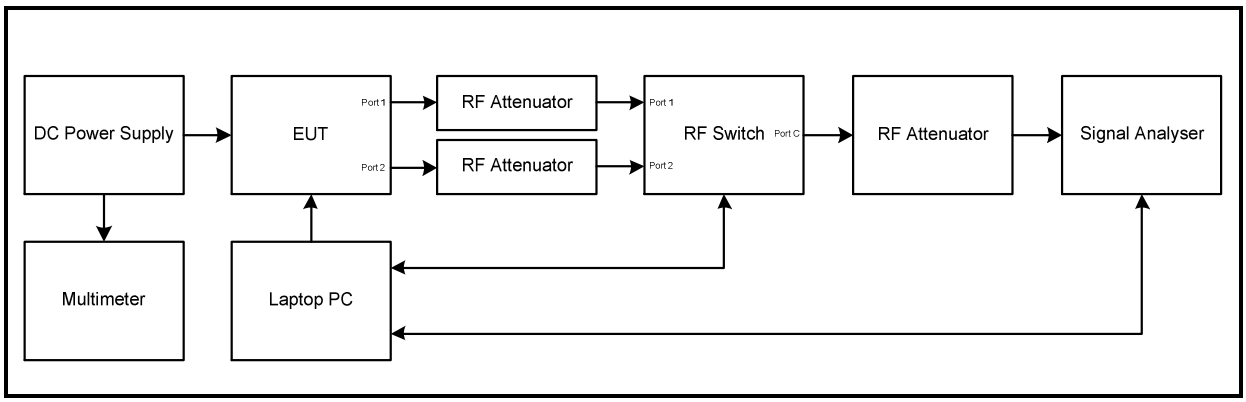
Note(s):

1. Transmitter Maximum Power Spectral Density tests in all bands were performed using a test receiver in accordance with KDB 789033 II. F referencing II.E.2.d) Method SA-2.
2. All supported modes and channel widths were initially investigated on one channel. The modes that produced the highest power spectral density and therefore deemed worst case were:
    - 802.11a – 16QAM / 36 Mbps
    - 802.11n HT20 – QPSK / 19.5 Mbps / MCS2
    - 802.11n HT40 – BPSK / 13.5 Mbps / MCS0
    - 802.11ac VHT80 – 64QAM / 263.3 Mbps / MCS6x1

    Measurements were then performed in these modes on bottom, middle and top channels in all operating bands.
3. The EUT was transmitting at <98% duty cycle and the calculated duty cycle in Section 5.2.4 was added to the measured maximum power spectral density in order to compute the average maximum power spectral density during the actual transmission time.
4. PSD was measured on both ports and then combined using the measure and sum spectral maxima across the outputs technique, stated in FCC KDB 662911 D01 Section E)2)b).
5. The EUT has a directional antenna gain of <6 dBi.
6. The signal analyser was connected to the RF ports on the EUT via an RF switch, using suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.
7. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.5 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.
8. For 802.11n HT20 the worst case conducted power spectral density was a different data rate to the worst case conducted output power. Plots for this configuration can be found in this section.

Transmitter Maximum Power Spectral Density (continued)

Test setup:



Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5180	3.2	0.6	3.8	3.2	0.6	3.8
Middle	5200	3.1	0.6	3.7	3.2	0.6	3.8
Top	5240	3.1	0.6	3.7	2.9	0.6	3.5

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	3.8	3.8	6.8	11.0	4.2	Complied
Middle	5200	3.7	3.8	6.8	11.0	4.2	Complied
Top	5240	3.7	3.5	6.6	11.0	4.4	Complied

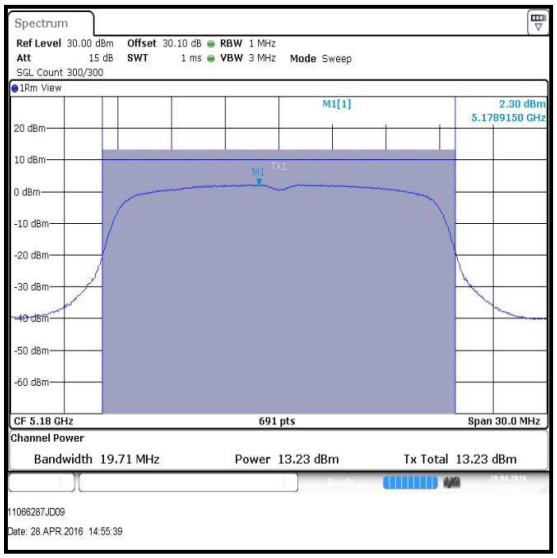
Results: 802.11n / 20 MHz / QPSK / MCS2

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5180	2.3	0.3	2.6	2.2	0.3	2.5
Middle	5200	2.2	0.3	2.5	2.1	0.3	2.4
Top	5240	2.3	0.3	2.6	1.9	0.3	2.2

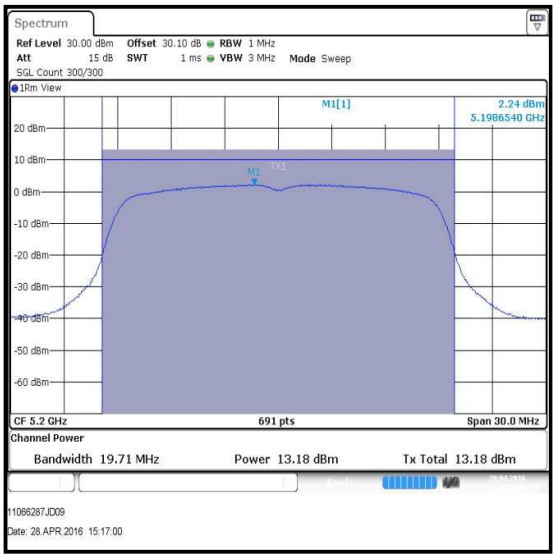
Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	2.6	2.5	5.6	11.0	5.4	Complied
Middle	5200	2.5	2.4	5.5	11.0	5.5	Complied
Top	5240	2.6	2.2	5.4	11.0	5.6	Complied

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)

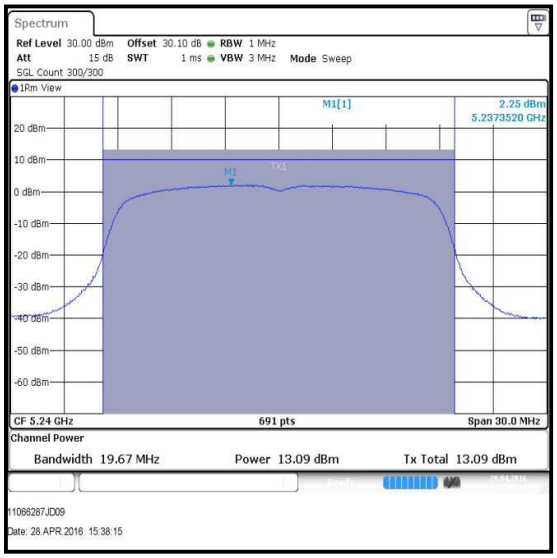
Results: 802.11n / 20 MHz / QPSK / MCS2 / Port 1



Bottom Channel



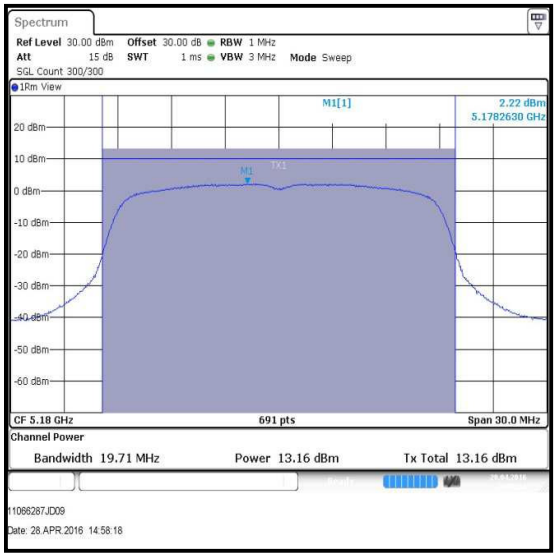
Middle Channel



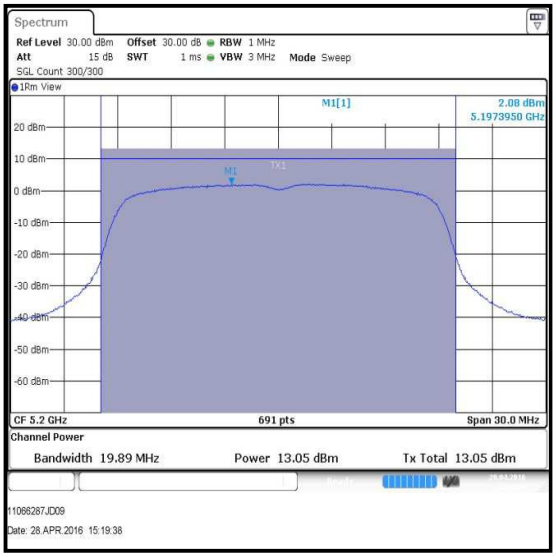
Top Channel

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)

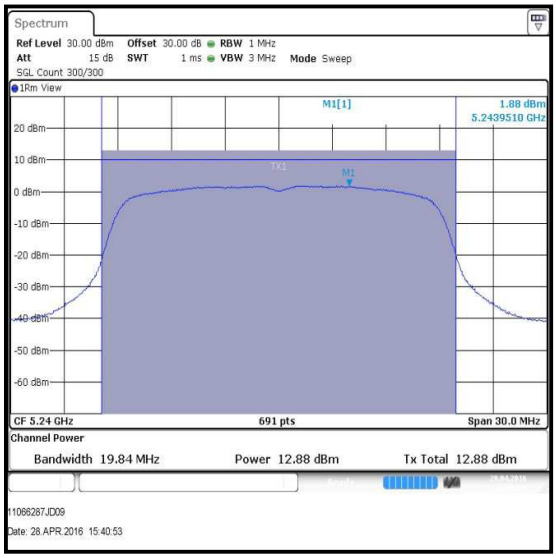
Results: 802.11n / 20 MHz / QPSK / MCS2 / Port 2



Bottom Channel



Middle Channel



Top Channel

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5190	-1.6	0.2	-1.4	-1.6	0.2	-1.4
Top	5230	-1.7	0.2	-1.5	-1.8	0.2	-1.6

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5190	-1.4	-1.4	1.6	11.0	9.4	Complied
Top	5230	-1.5	-1.6	1.5	11.0	9.5	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5210	-6.1	2.5	-3.6	-6.1	2.5	-3.6

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5210	-3.6	-3.6	-0.6	11.0	11.6	Complied

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	28 April 2016 to 17 June 2016
Test Sample IMEI:	357232070003098		

FCC Reference:	Part 15.407(a)(2)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.d)

Environmental Conditions:

Temperature (°C):	23 to 26
Relative Humidity (%):	28 to 48

Note(s):

1. FCC Part 15.407(a)(2) limit for PPSD in the 5.25-5.35 GHz and 5.47-5.725 GHz operating bands is <11 dBm/MHz.
2. The EUT has a directional antenna gain of <6 dBi.
3. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.5 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.
4. For 802.11n HT20 the worst case conducted power spectral density was a different data rate to the worst case conducted output power. Plots for this configuration can be found in this section.

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / 5.25-5.35 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5260	3.1	0.6	3.7	3.3	0.6	3.9
Middle	5280	3.0	0.6	3.6	3.0	0.6	3.6
Top	5320	2.7	0.6	3.3	2.7	0.6	3.3

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	3.7	3.9	6.8	11.0	4.2	Complied
Middle	5280	3.6	3.6	6.6	11.0	4.4	Complied
Top	5320	3.3	3.3	6.3	11.0	4.7	Complied

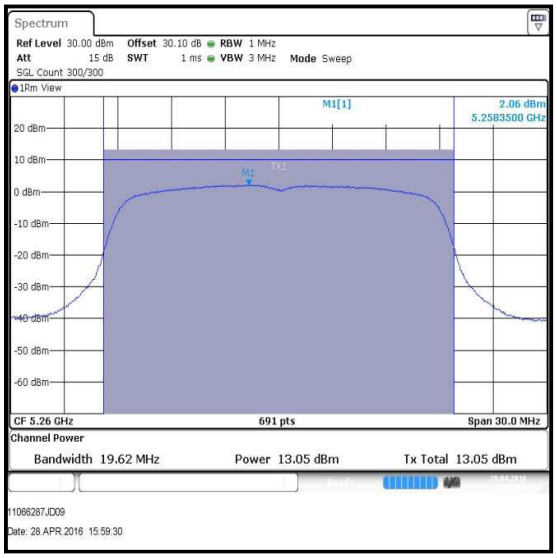
Results: 802.11n / 20 MHz / QPSK / MCS2 / 5.25-5.35 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5260	2.1	0.3	2.4	2.0	0.3	2.3
Middle	5280	2.0	0.3	2.3	1.7	0.3	2.0
Top	5320	1.8	0.3	2.1	1.6	0.3	1.9

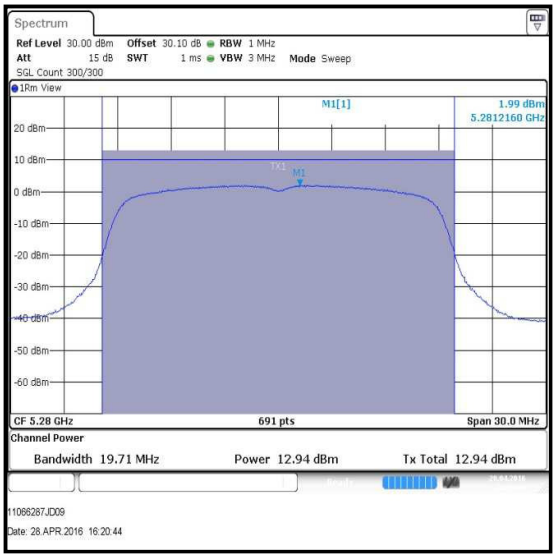
Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	2.4	2.3	5.4	11.0	5.6	Complied
Middle	5280	2.3	2.0	5.2	11.0	5.8	Complied
Top	5320	2.1	1.9	5.0	11.0	6.0	Complied

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

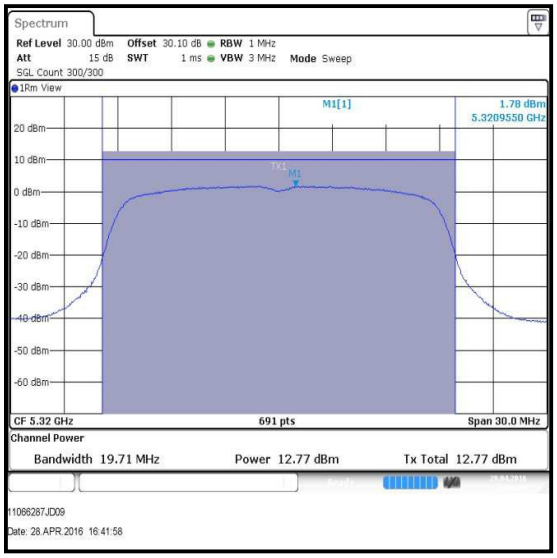
Results: 802.11n / 20 MHz / QPSK / MCS2 / 5.25-5.35 GHz band / Port 1



Bottom Channel



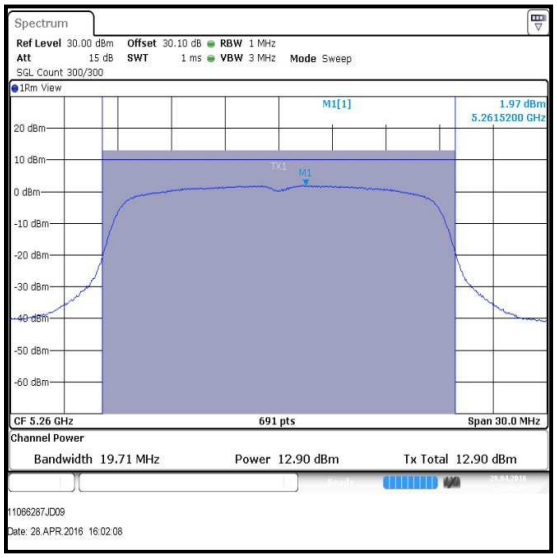
Middle Channel



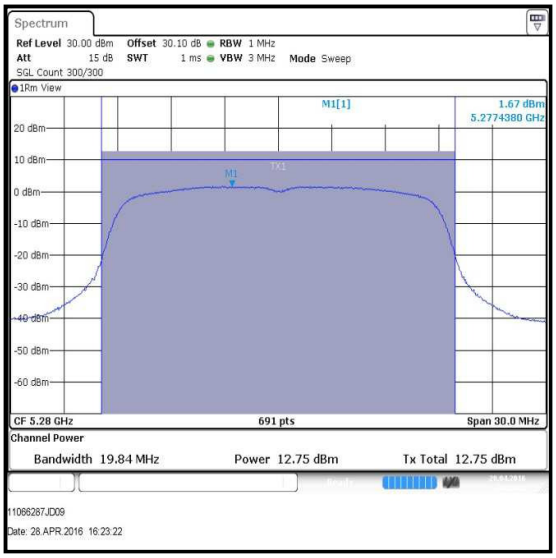
Top Channel

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

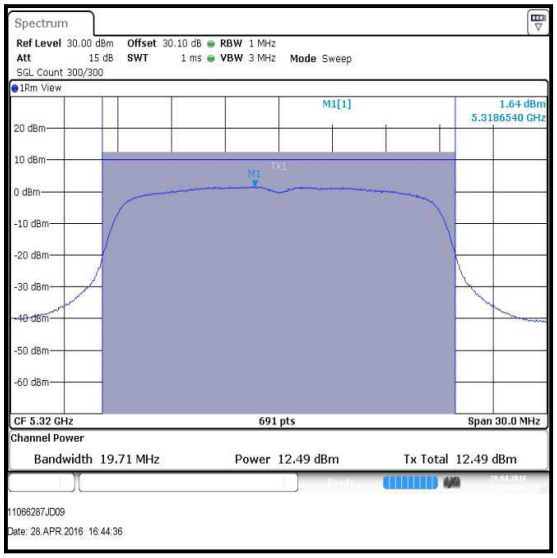
Results: 802.11n / 20 MHz / QPSK / MCS2 / 5.25-5.35 GHz band / Port 2



Bottom Channel



Middle Channel



Top Channel

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / 5.25-5.35 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5270	-1.0	0.2	-0.8	-1.3	0.2	-1.1
Top	5310	-1.1	0.2	-0.9	-1.4	0.2	-1.2

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5270	-0.8	-1.1	2.1	11.0	8.9	Complied
Top	5310	-0.9	-1.2	2.0	11.0	9.0	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / 5.25-5.35 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5290	-6.4	2.5	-3.9	-6.4	2.5	-3.9

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5290	-3.9	-3.9	-0.9	11.0	11.9	Complied

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5500	3.8	0.6	4.4	3.6	0.6	4.2
Middle	5580	3.7	0.6	4.3	3.1	0.6	3.7
Top	5700	3.6	0.6	4.2	2.9	0.6	3.5

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	4.4	4.2	7.3	11.0	3.7	Complied
Middle	5580	4.3	3.7	7.0	11.0	4.0	Complied
Top	5700	4.2	3.5	6.9	11.0	4.1	Complied

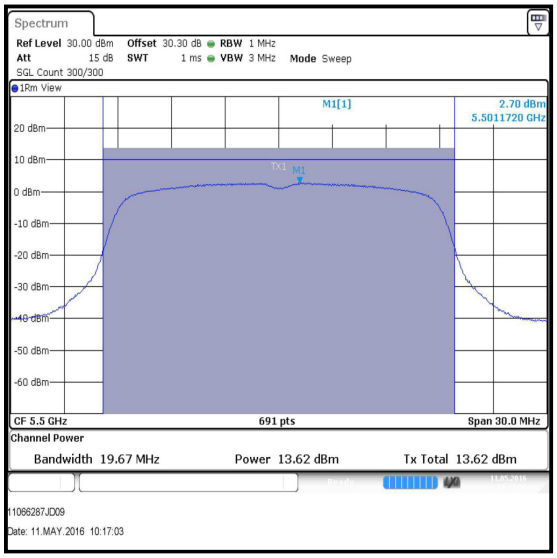
Results: 802.11n / 20 MHz / QPSK / MCS2 / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5500	2.7	0.3	3.0	2.3	0.3	2.6
Middle	5580	2.6	0.3	2.9	2.3	0.3	2.6
Top	5700	2.6	0.3	2.9	2.1	0.3	2.4

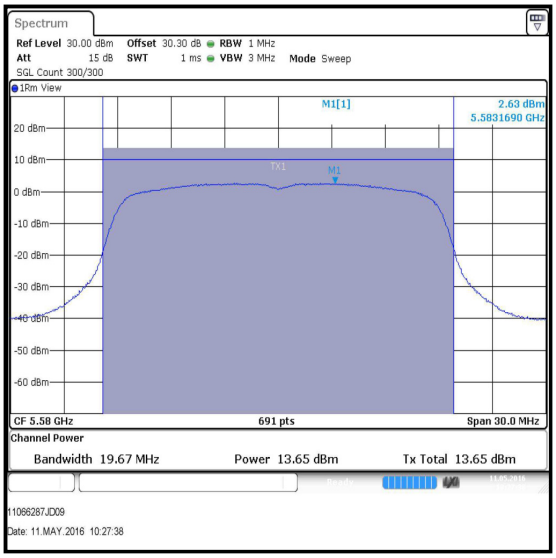
Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	3.0	2.6	5.8	11.0	5.2	Complied
Middle	5580	2.9	2.6	5.8	11.0	5.2	Complied
Top	5700	2.9	2.4	5.7	11.0	5.3	Complied

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

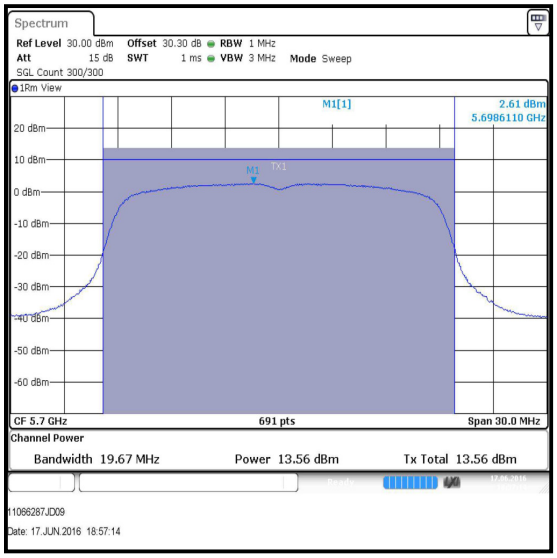
Results: 802.11n / 20 MHz / QPSK / MCS2 / 5.47-5.725 GHz band / Port 1



Bottom Channel



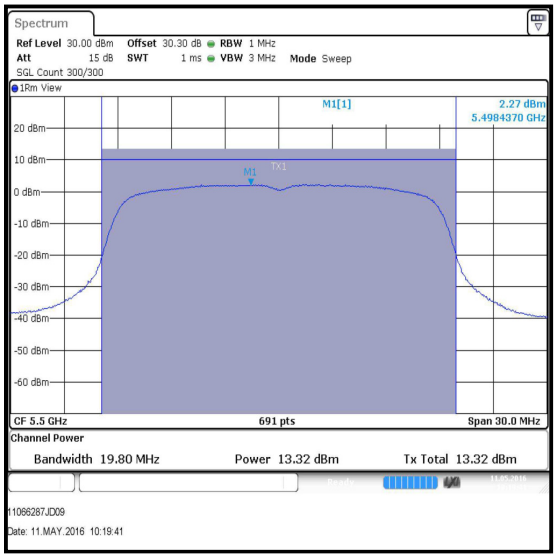
Middle Channel



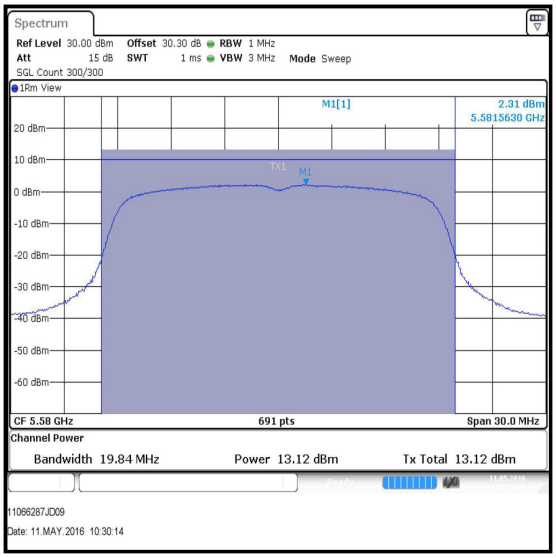
Top Channel

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

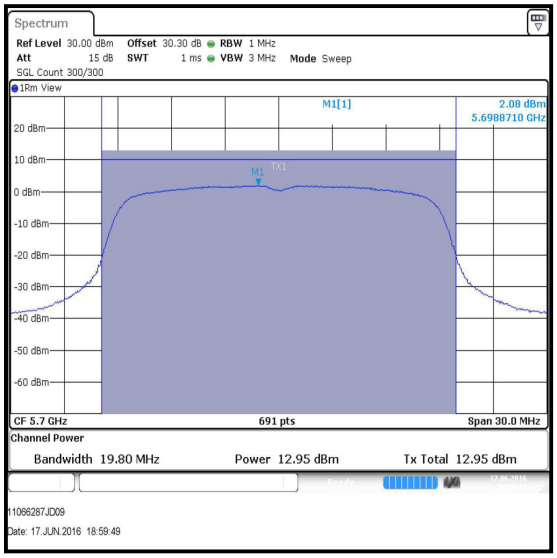
Results: 802.11n / 20 MHz / QPSK / MCS2 / 5.47-5.725 GHz band / Port 2



Bottom Channel



Middle Channel



Top Channel

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5510	-0.9	0.2	-0.7	-1.3	0.2	-1.1
Middle	5550	-1.0	0.2	-0.8	-1.5	0.2	-1.3
Top	5670	-1.0	0.2	-0.8	-1.6	0.2	-1.4

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5510	-0.7	-1.1	2.1	11.0	8.9	Complied
Middle	5550	-0.8	-1.3	2.0	11.0	9.0	Complied
Top	5670	-0.8	-1.4	1.9	11.0	9.1	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5530	-5.3	2.5	-2.8	-5.8	2.5	-3.3
Top	5610	-5.3	2.5	-2.8	-6.0	2.5	-3.5

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5530	-2.8	-3.3	0.0	11.0	11.0	Complied
Top	5610	-2.8	-3.5	-0.1	11.0	11.1	Complied

Transmitter Maximum Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Date:**	11 May 2016
Test Sample IMEI:	357232070003098		

FCC Reference:	Part 15.407(a)(2)
Test Method Used:	KDB 789033 D02 Section II.E.2.d)

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	28

Note(s):

1. For channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz, the maximum power spectral density limit is more stringent on U-NII-2C, compliance is shown against the limits of U-NII-2C. By default the EUT also complies on U-NII-3.
2. FCC Part 15.407(a)(2) limit for PPSD in the 5.47-5.725 GHz operating band is <11 dBm/MHz.
3. The EUT has a directional antenna gain of <6 dBi.
4. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.5 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.
5. For 802.11n HT20 the worst case conducted power spectral density was a different data rate to the worst case conducted output power. Plots for this configuration can be found in this section.

Transmitter Peak Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5720	3.5	0.6	4.1	2.7	0.6	3.3

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5720	4.1	3.3	6.7	11.0	4.3	Complied

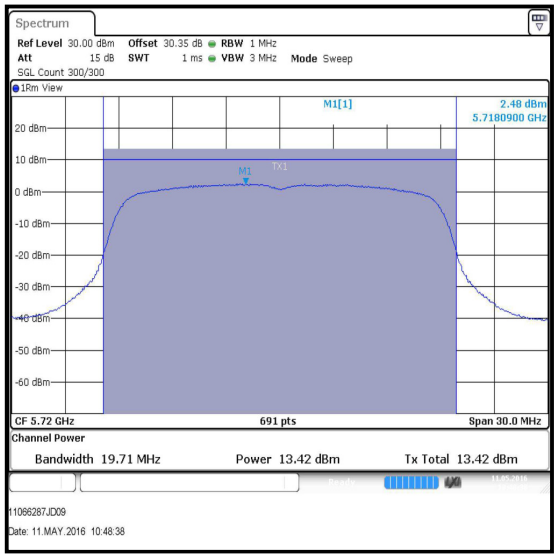
Results: 802.11n / 20 MHz / QPSK / MCS2

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5720	2.5	0.3	2.8	1.5	0.3	1.8

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5720	2.8	1.8	5.3	11.0	5.7	Complied

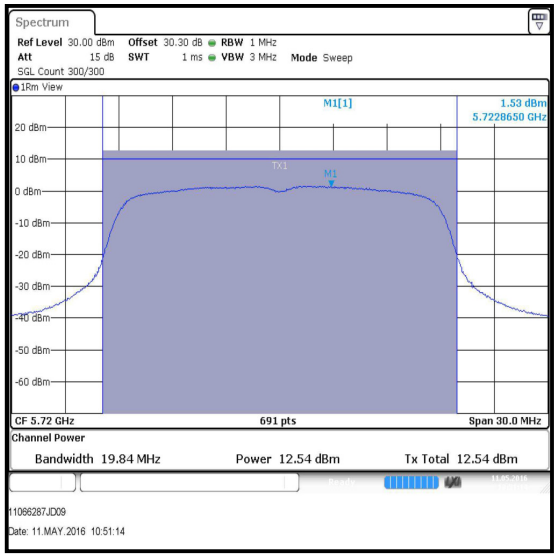
Transmitter Peak Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11n / 20 MHz / QPSK / MCS2 / Port 1



Single Channel

Results: 802.11n / 20 MHz / QPSK / MCS2 / Port 2



Single Channel

Transmitter Peak Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5710	-1.1	0.2	-0.9	-2.0	0.2	-1.8

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5710	-0.9	-1.8	1.7	11.0	9.3	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5690	-5.7	2.5	-3.2	-6.2	2.5	-3.7

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5690	-3.2	-3.7	-0.4	11.0	11.4	Complied

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Date:**	07 May 2016
Test Sample IMEI:	357232070003098		

FCC Reference:	Part 15.407(a)(3)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.d)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	33

Note(s):

1. FCC Part 15.407(a)(3) limit for PPSD in the 5.725-5.85 GHz operating band is <30 dBm/500 kHz.
2. In accordance with ANSI C63.10 Section 4.1.4.1, use of bandwidths greater than those specified can produce higher readings. Compliance against the applicable limits is shown using a 1 MHz resolution bandwidth. This was deemed worst case.
3. The EUT has a directional antenna gain of <6 dBi.
4. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.5 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.
5. For 802.11n HT20 the worst case conducted power spectral density was a different data rate to the worst case conducted output power. Plots for this configuration can be found in this section.

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5745	3.7	0.6	4.3	2.5	0.6	3.1
Middle	5785	3.7	0.6	4.3	2.5	0.6	3.1
Top	5825	3.6	0.6	4.2	2.4	0.6	3.0

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	4.3	3.1	6.8	30.0	23.2	Complied
Middle	5785	4.3	3.1	6.8	30.0	23.2	Complied
Top	5825	4.2	3.0	6.7	30.0	23.3	Complied

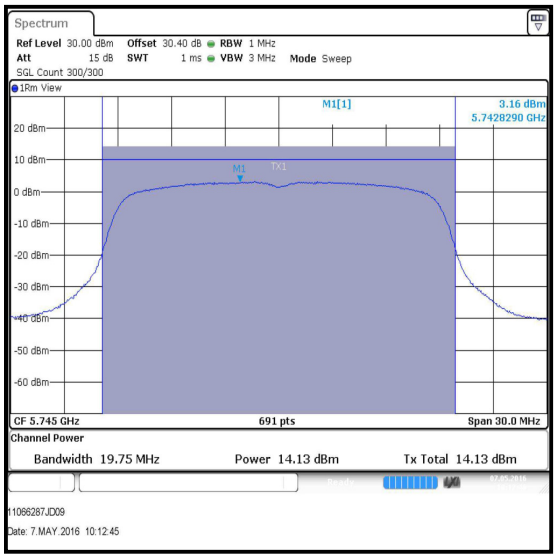
Results: 802.11n / 20 MHz / QPSK / MCS2

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5745	3.2	0.3	3.5	2.1	0.3	2.4
Middle	5785	2.8	0.3	3.1	1.7	0.3	2.0
Top	5825	2.5	0.3	2.8	1.7	0.3	2.0

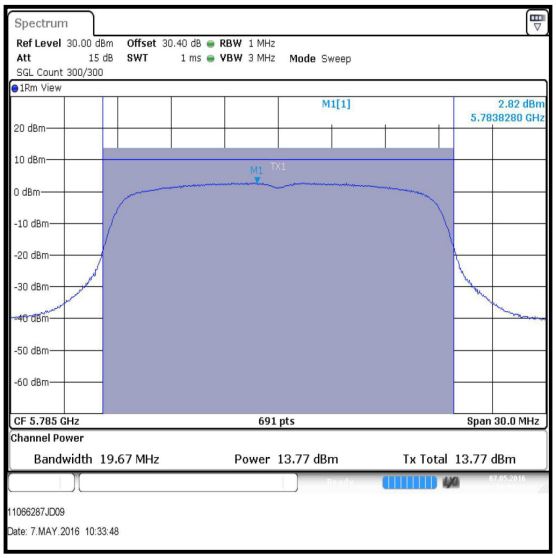
Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	3.5	2.4	6.0	30.0	24.0	Complied
Middle	5785	3.1	2.0	5.6	30.0	24.4	Complied
Top	5825	2.8	2.0	5.4	30.0	24.6	Complied

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band) (continued)

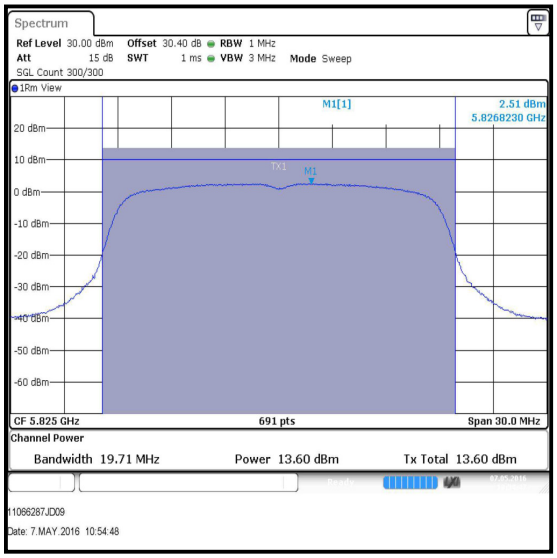
Results: 802.11n / 20 MHz / QPSK / MCS2 / Port 1



Bottom Channel



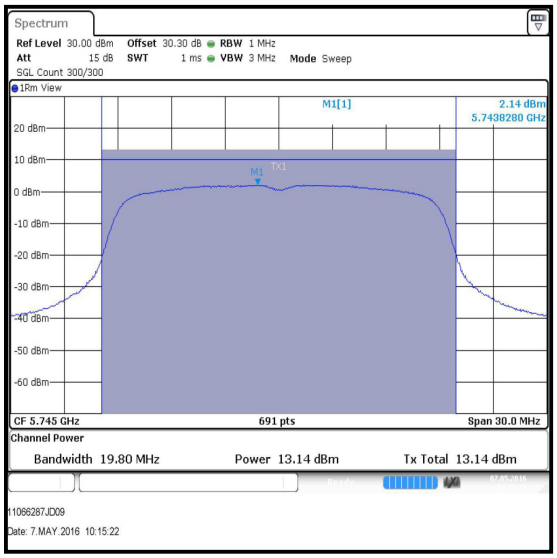
Middle Channel



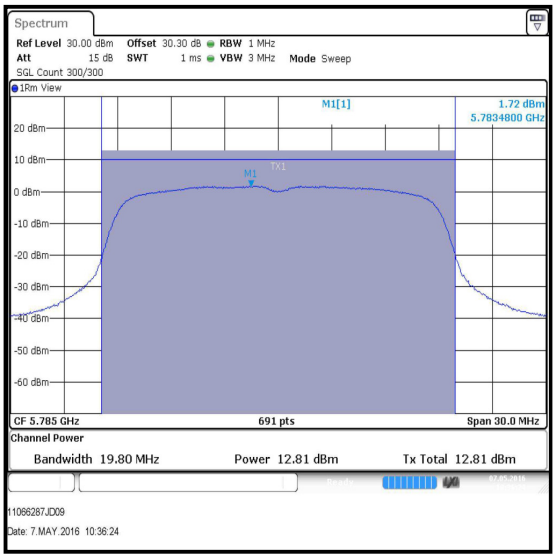
Top Channel

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band) (continued)

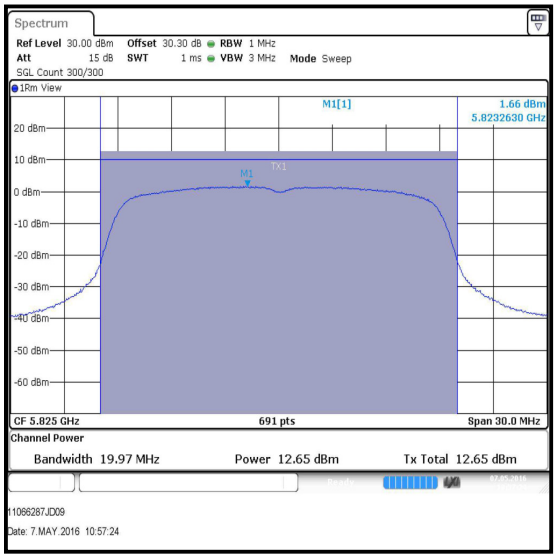
Results: 802.11n / 20 MHz / QPSK / MCS2 / Port 2



Bottom Channel



Middle Channel



Top Channel

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Bottom	5755	-0.9	0.2	-0.7	-1.6	0.2	-1.4
Top	5795	-0.8	0.2	-0.6	-1.6	0.2	-1.4

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5755	-0.7	-1.4	2.0	30.0	28.0	Complied
Top	5795	-0.6	-1.4	2.0	30.0	28.0	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)	Conducted PPSD (dBm/MHz)	Duty Cycle Correction (dB)	Corrected Conducted PPSD (dBm/MHz)
Single	5775	-5.7	2.5	-3.2	-6.5	2.5	-4.0

Channel	Frequency (MHz)	Corrected Conducted PPSD Port 1 (dBm /MHz)	Corrected Conducted PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Single	5775	-3.2	-4.0	-0.6	30.0	30.6	Complied

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1873	Signal Analyser	Rohde & Schwarz	FSV30	103074	03 Jul 2016	12
M1867	Attenuator	Huber + Suhner AG	6820.17.B	07101	Calibrated before use	-
A2847	Attenuator	Radiall	R411.820.121	24671450	Calibrated before use	-
A2345	Attenuator	Macom	2082-6043-20	None stated	Calibrated before use	-
A2952	RF Switch	Pickering Interfaces	64-102-002 & 40-881-001	XZ340281 & X311198	Calibrated before use	-
S0538	DC Power Supply	TTi	PL154	250135	Calibrated before use	-
M1269	Multimeter	Fluke	175	90250210	13 May 2017	12
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24

5.2.7. Transmitter Out of Band Radiated Emissions

Test Summary:

Test Engineer:	Ian Watch	**Test Date:**	27 April 2016
Test Sample IMEI:	357232070004146		

FCC Reference:	Parts 15.407(b)(3),(6),(7) & 15.209(a)
Test Method Used:	KDB 789033 D02 Section II.G. & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

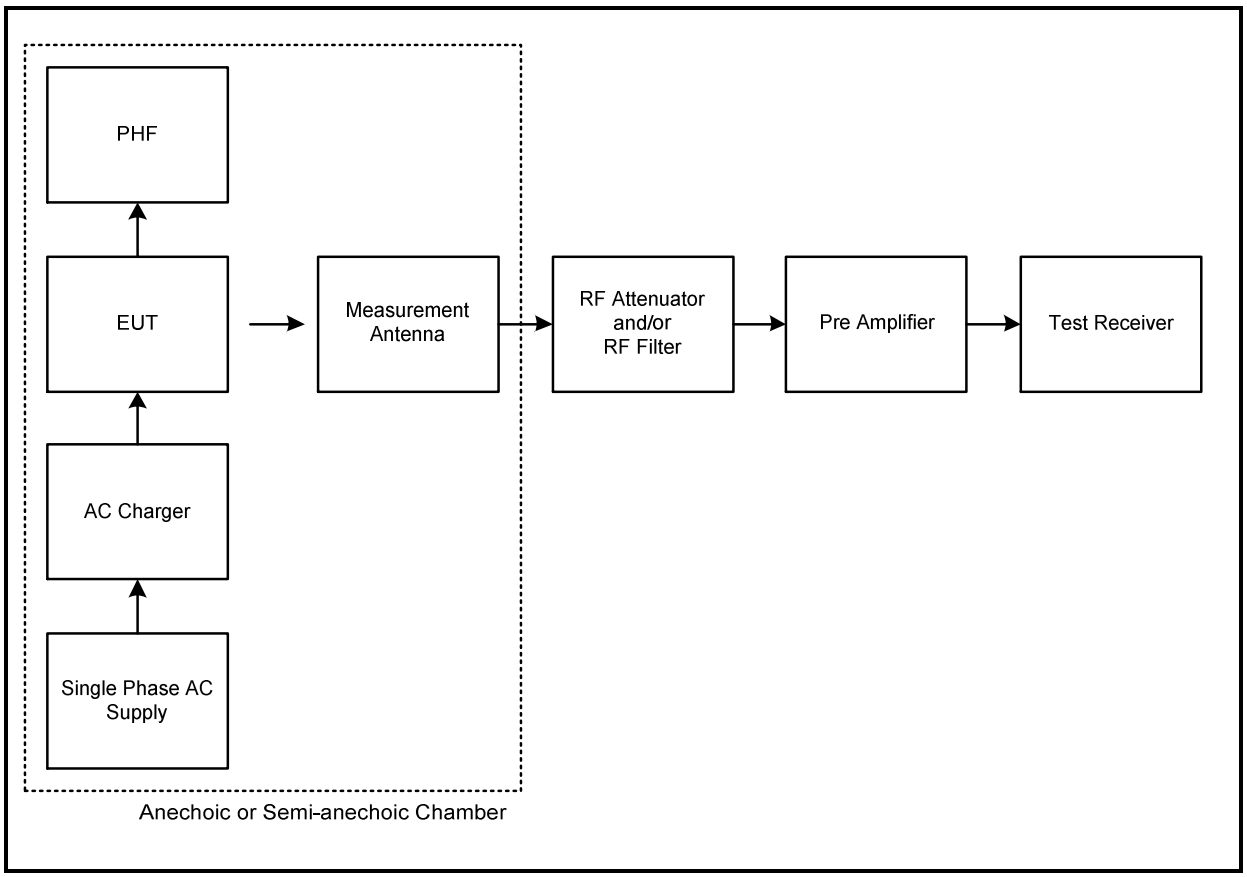
Temperature (°C):	22
Relative Humidity (%):	32

Note(s):

1. Measurements below 1 GHz were limited to the 5.47-5.725 GHz band, the EUT was transmitting with a data rate of 36 Mbps (802.11a) as it produced the highest conducted output power and was therefore deemed worst case.
2. Pre-scans with the EUT transmitting on the top channel were measured according to FCC Part 15.407(b)(3) which states for transmitters operating in the band 5.47 to 5.725 GHz: all emissions outside of the band 5.47-5.725 GHz band shall not exceed an e.i.r.p of -27 dBm/MHz. Part(b)(6) states unwanted emissions below 1 GHz must comply with the general field strength limits set forth in 15.209. Part(b)(7) states the provisions of 15.205 apply, e.g. restricted bands of operation.
3. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
4. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.
5. All other emissions shown on the pre-scan plots were investigated and found to be ambient or >20 dB below the applicable limit or below the measurement system noise floor.
6. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
7. Pre-scans were performed and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. The sweep time was set to auto. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
8. Final measurements were performed on the marker frequencies and the results entered into the table below. The test receiver resolution bandwidth was set to 120 kHz, using a CISPR quasi-peak detector and span big enough to see the whole emission.

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)

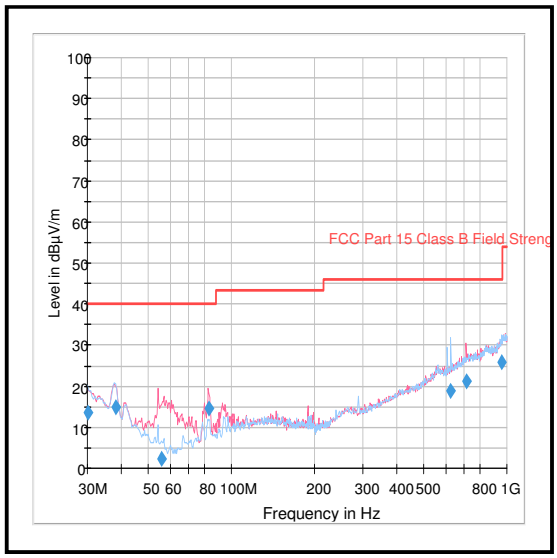
Test setup for radiated measurements:



Results: Middle Channel / Field Strength

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
38.203	Horizontal	15.1	40.0	24.9	Complied

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)



Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1625	Thermohygrometer	JM Handelspunkt	30.5015.06	None stated	11 Jan 2017	12
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	12 Jan 2017	12
A1834	Attenuator	Hewlett Packard	8491B	10444	30 Mar 2017	12
G0543	Amplifier	Sonoma	310N	230801	29 May 2016	3
M1273	Test Receiver	Rohde & Schwarz	ESIB26	100275	11 Apr 2017	12
A259	Antenna	Chase	CBL6111A	1513	30 Mar 2017	12

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	13 June 2016 & 17 June 2016
Test Sample Serial Number:	357232070004146		

FCC Reference:	Part 15.407(b)(3),(7) & 15.209(a)
Test Method Used:	KDB 789033 D02 Section II.G. & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	43 to 45

Note(s):

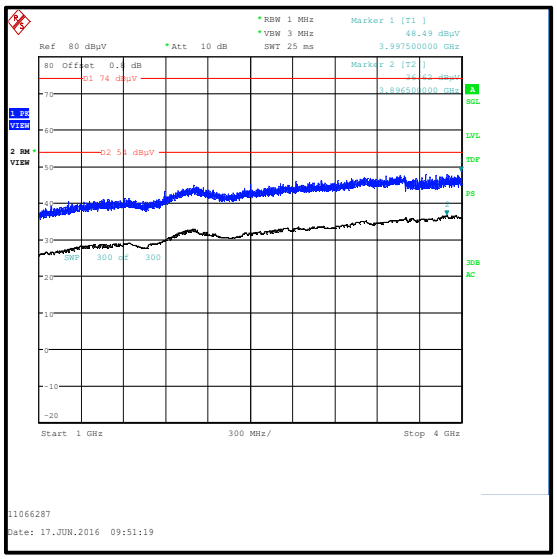
1. FCC Part 15.407(b)(3) states for transmitters operating in the band 5.47 to 5.725 GHz: all emissions outside of the band will not exceed -27 dBm/MHz. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. Pre-scans were performed with the EUT transmitting on middle channel in the 5.475-5.725 GHz band as it produced the highest conducted output power and was therefore deemed worst case. The EUT was transmitting on the middle channel with a data rate of 36 Mbps (802.11a). An inquiry was made to the FCC and the response was pre-scans could be performed in the band with the highest conducted output power and all final measurements should be performed on any emissions seen in each band
3. No emissions were shown on the pre-scan plots; therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
4. Appropriate RF filters and attenuators were used during pre-scans. Insertion losses were entered on the spectrum analyser as RF levels offsets.
5. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
6. The emission shown on the 4 GHz to 6 GHz plot is the EUT fundamental.
7. Measurements were performed across the two restricted bands closest to the bands of operation with the EUT transmitting on the top channel in the 5.25 to 5.35 GHz band. Plots are included in this section of the test report. Peak and average measurements were made.
8. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0002) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT.

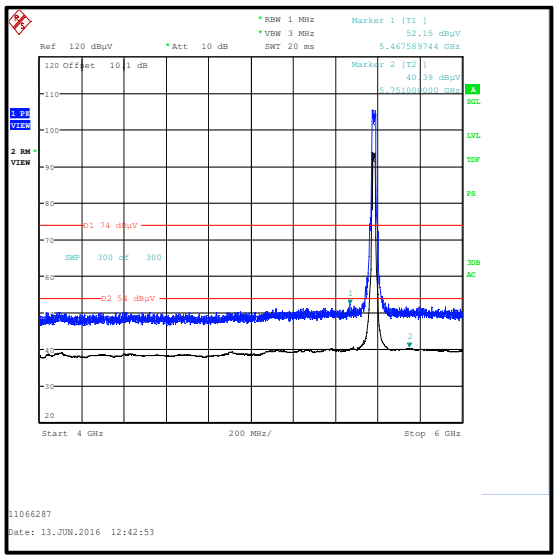
Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)

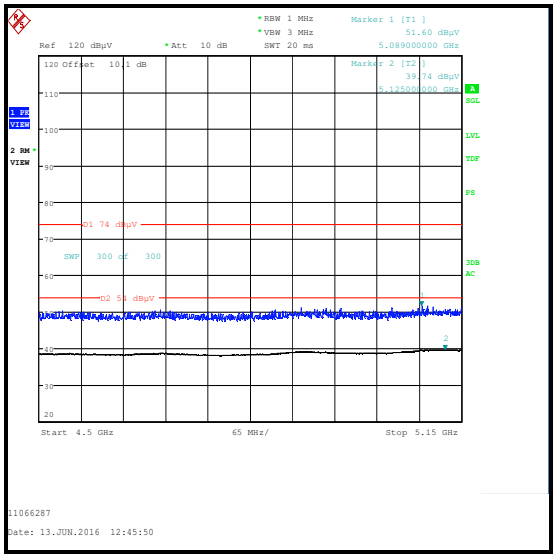
Results: Middle Channel / Field Strength

Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)	Result
39524	Vertical	58.9	74.0	15.1	Complied

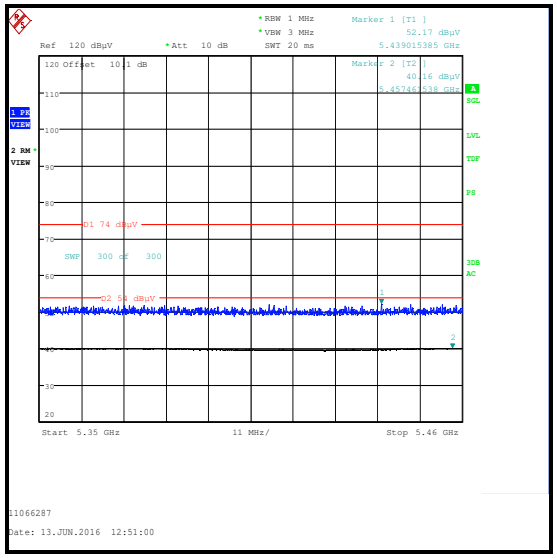
Frequency (MHz)	Antenna Polarity	Average Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
39568	Vertical	47.2	54.0	6.8	Complied





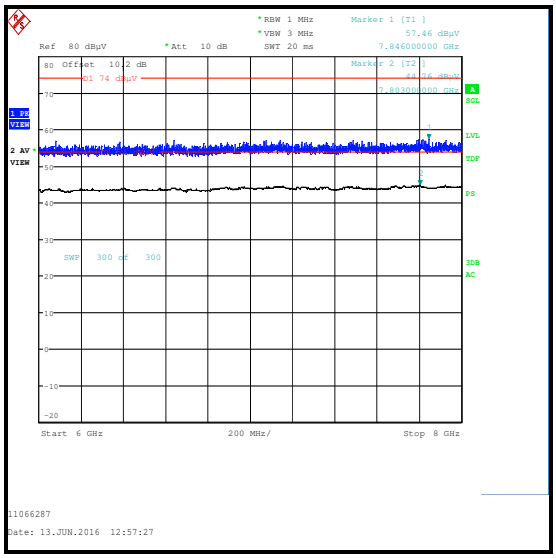


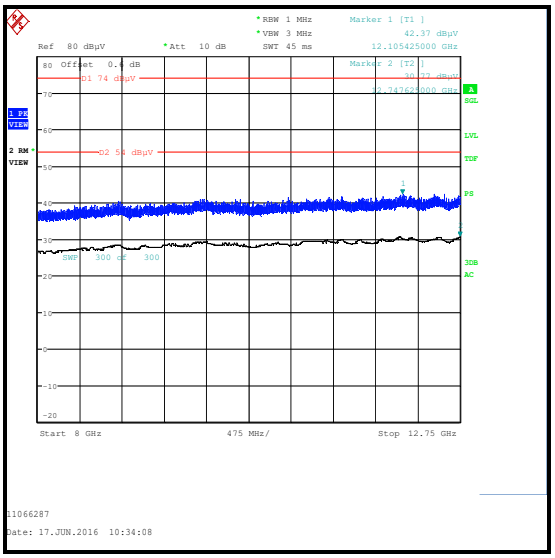
Restricted Band 4.5 GHz to 5.15 GHz

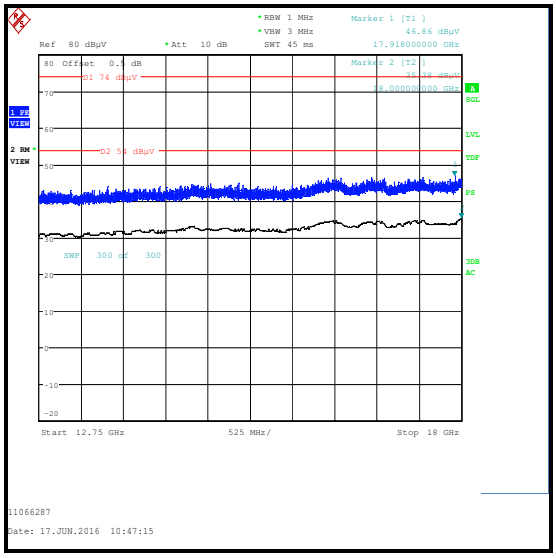


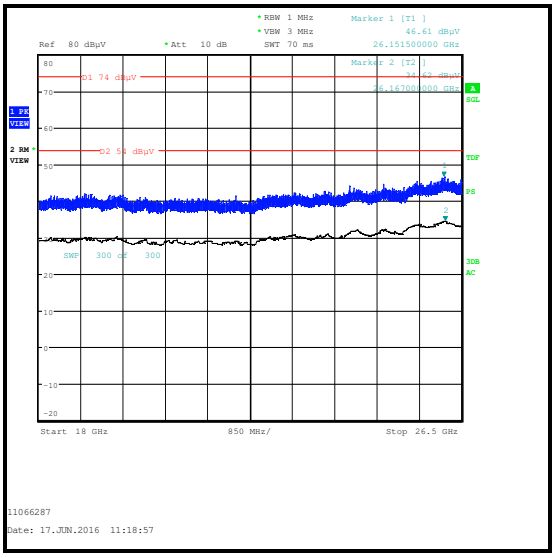
Restricted Band 5.35 GHz to 5.46 GHz

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)

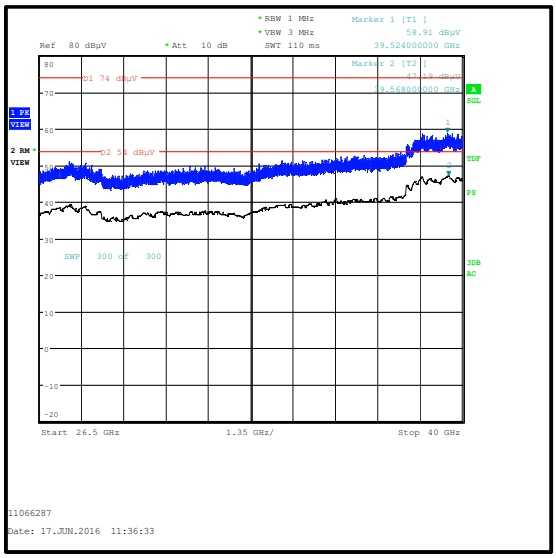








Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)



Transmitter Out of Band Radiated Emissions (continued)

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1656	Thermohygrometer	JM Handelspunkt	30.5015.13	Not stated	02 Apr 2017	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	21 Dec 2016	12
M1886	Test Receiver	Rohde & Schwarz	ESU26	100554	21 May 2017	12
M1630	Test Receiver	Rohde & Schwarz	ESU40	100233	17 Feb 2017	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	19 Dec 2016	12
A1818	Antenna	EMCO	3115	00075692	17 Dec 2016	12
A253	Antenna	Flann Microwave	12240-20	128	17 Dec 2016	12
A254	Antenna	Flann Microwave	14240-20	139	17 Dec 2016	12
A255	Antenna	Flann Microwave	16240-20	519	17 Dec 2016	12
A256	Antenna	Flann Microwave	18240-20	400	17 Dec 2016	12
A2892	Antenna	Schwarzbeck Mess-Elektronik	BBHA 9170	9170-727	07 Apr 2017	12
A2893	Pre Amplifier	Schwarzbeck Mess-Elektronik	BBV 9721	9721-021	07 Apr 2017	12
S0582	Power Supply	Schwarzbeck Mess-Elektronik	PS9721	00005	Calibrated before use	-
M1818	Multimeter	Fluke	79III	71811580	27 Apr 2017	12
A1396	Attenuator	Huber & Suhner	6810.17.B	757987	30 Apr 2017	12
A2133	Low Pass Filter	AtlanTecRF	AFL-04000	JFB1006-002	26 Apr 2017	12
A2176	High Pass Filter	AtlanTecRF	AFH-07000	800980	26 Apr 2017	12
M1625	Thermohygrometer	JM Handelspunkt	30.5015.06	None stated	11 Jan 2017	12
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	12 Jan 2017	12
A1834	Attenuator	Hewlett Packard	8491B	10444	Calibrated before use	-
G0543	Amplifier	Sonoma	310N	230801	09 Dec 2016	6
M1273	Test Receiver	Rohde & Schwarz	ESIB26	100275	11 Apr 2017	12
A259	Antenna	Chase	CBL6111A	1513	30 Mar 2017	12

5.2.8. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	28 May 2016 & 13 June 2016
Test Sample IMEI:	357232070004146		

FCC Reference:	Parts 15.407(b)(1),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 Section II.G.

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	38 to 45

Note(s):

1. Band edge measurements were performed in the EUT modes that produce the highest power and the widest bandwidths. The modes were:
    - 802.11a – 16QAM / 36 Mbps
    - 802.11n HT20 – 16QAM / 39 Mbps / MCS4
    - 802.11n HT40 – BPSK / 13.5 Mbps / MCS0
    - 802.11n HT40 – 64QAM / 108 Mbps / MCS5
    - 802.11ac VHT80 – 64QAM / 263.3 Mbps / MCS6x1
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply.
4. Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz. Field strength and EIRP results were found to be compliant with the restricted band limits and Part 15.407 out-of-band limits.
5. For all average measurements of this section, 300 sweeps were used. This satisfies the requirement for the minimum number of sweep points, as stated in KDB 789033 Section II.G.6.c) Method AD (vi). Power averaging was used.
6. In accordance with KDB 789033 Section II.G.6.c) Method AD (vii), for average measurements, data rates where the EUT was transmitting <98% duty cycle, the duty cycle correction factor calculated in Section 5.2.4 of this test report was added to the measured result.

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5148.397	62.8	74.0	11.2	Complied
5150	61.8	74.0	12.2	Complied

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	46.0	0.6	46.6	54.0	7.4	Complied

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Upper Band Edge / Peak

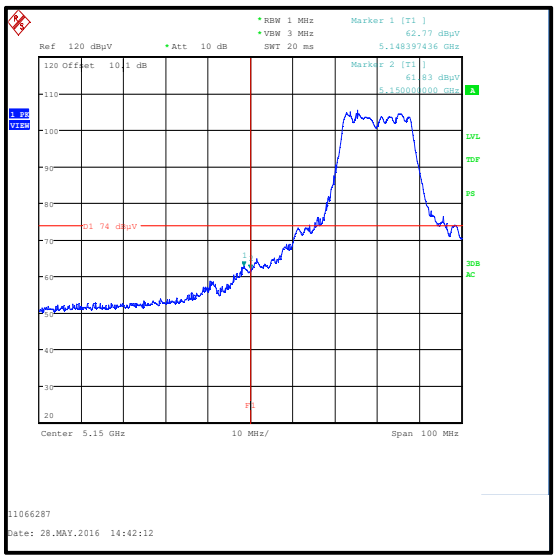
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	50.5	74.0	23.5	Complied

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Upper Band Edge / Average

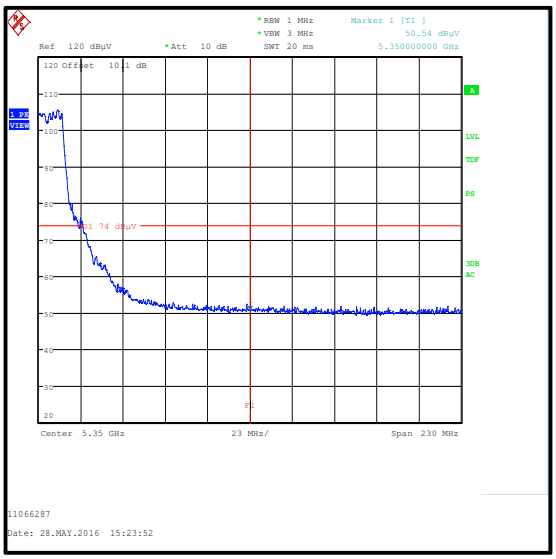
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	39.9	0.6	40.5	54.0	13.5	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

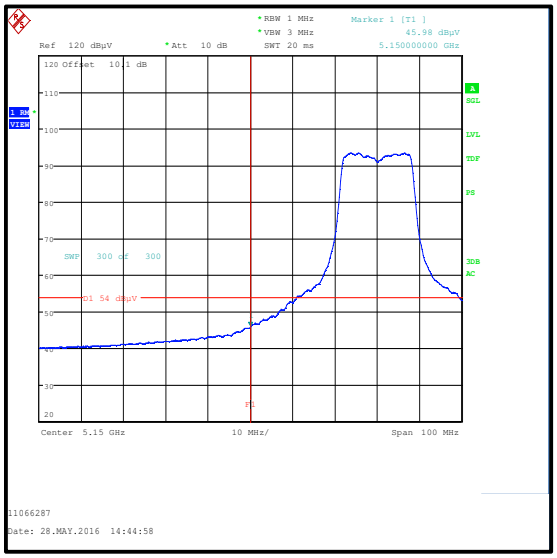
Results: 802.11a / 20 MHz / 16QAM / 36 Mbps



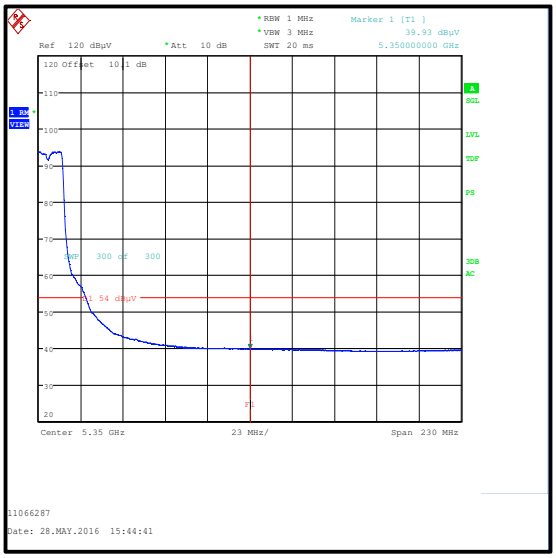
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5147.917	60.9	74.0	13.1	Complied
5150	60.0	74.0	14.0	Complied

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	44.6	0.6	45.2	54.0	8.8	Complied

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Upper Band Edge / Peak

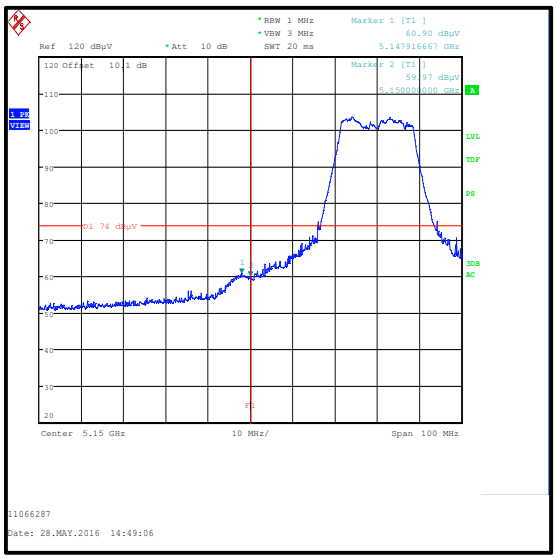
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	52.4	74.0	21.6	Complied

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Upper Band Edge / Average

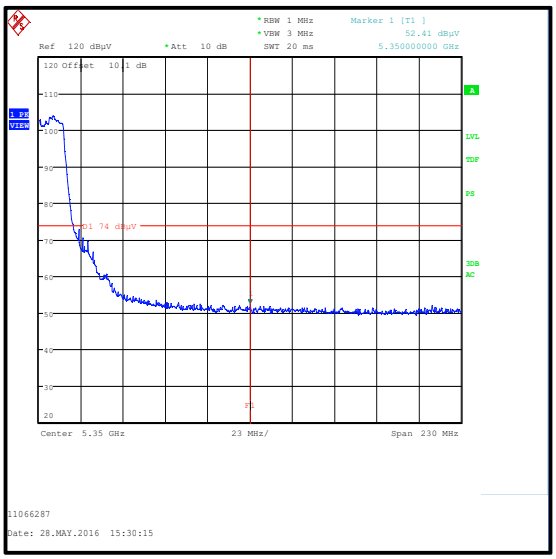
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	40.0	0.6	40.6	54.0	13.4	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

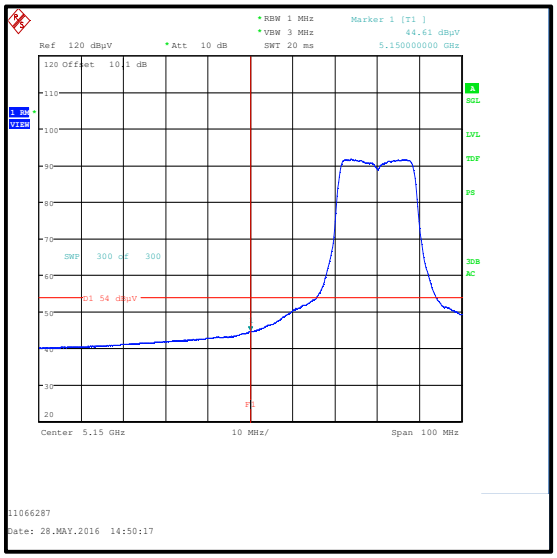
Results: 802.11n / 20 MHz / 16QAM / MCS4



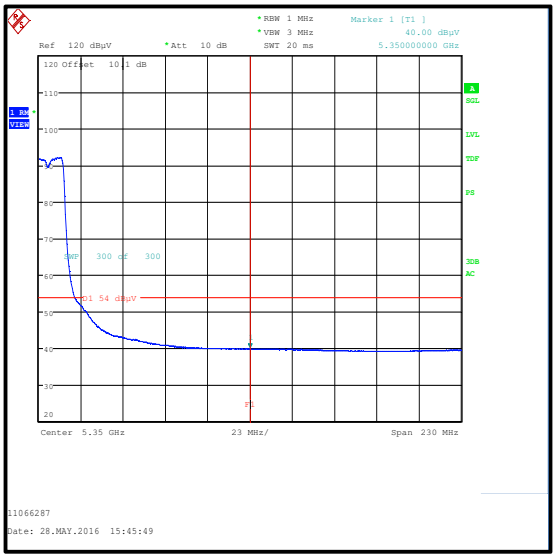
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5149.038	65.3	74.0	8.7	Complied
5150	62.2	74.0	11.8	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	47.2	0.2	47.4	54.0	6.6	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Upper Band Edge / Peak

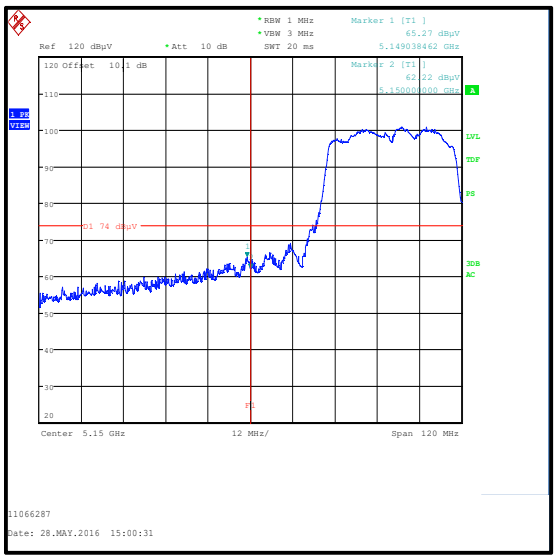
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	56.1	74.0	17.9	Complied
5361.795	57.3	74.0	16.7	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Upper Band Edge / Average

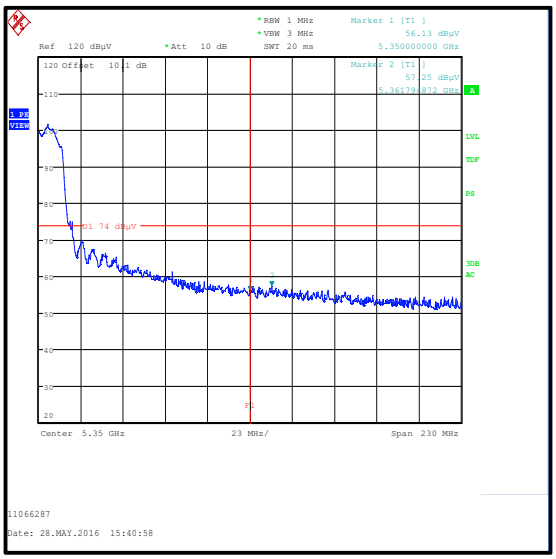
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	40.1	0.2	40.3	54.0	13.7	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

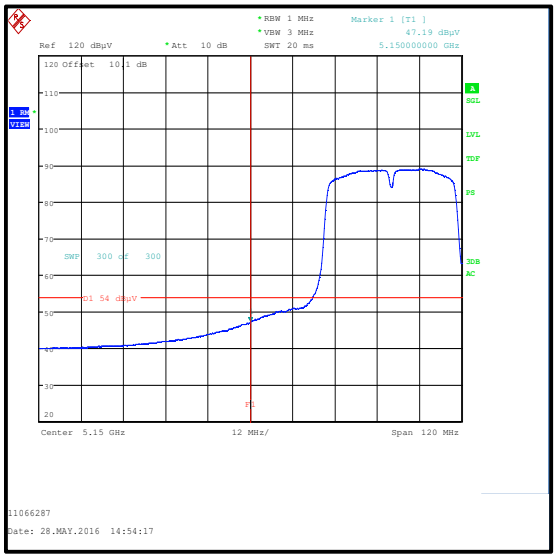
Results: 802.11n / 40 MHz / BPSK / MCS0



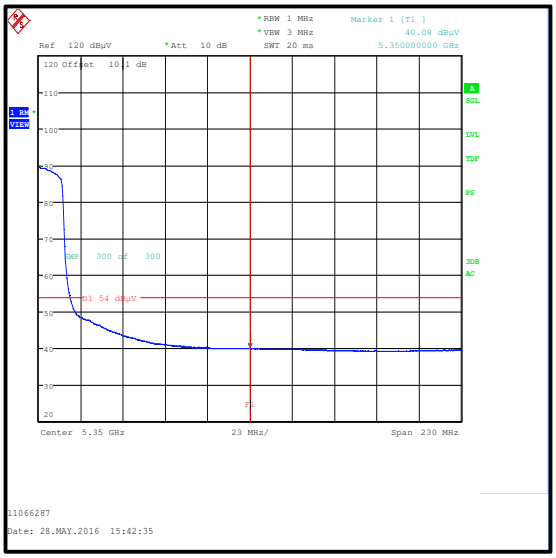
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5142.885	62.6	74.0	11.4	Complied
5150	61.2	74.0	12.8	Complied

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	47.3	1.3	48.6	54.0	5.4	Complied

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Upper Band Edge / Peak

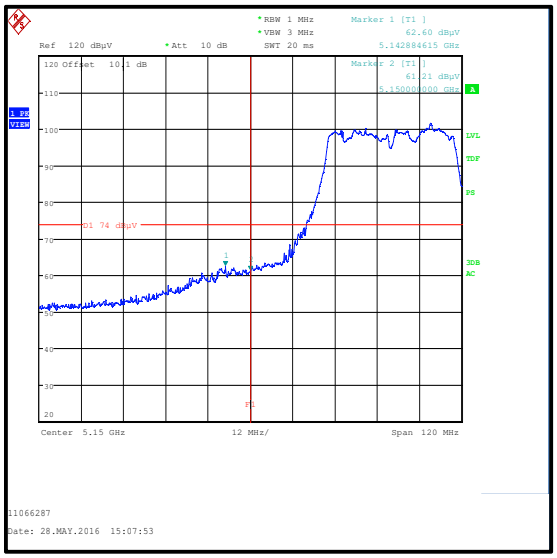
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	50.6	74.0	23.4	Complied
5365.112	52.6	74.0	21.4	Complied

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Upper Band Edge / Average

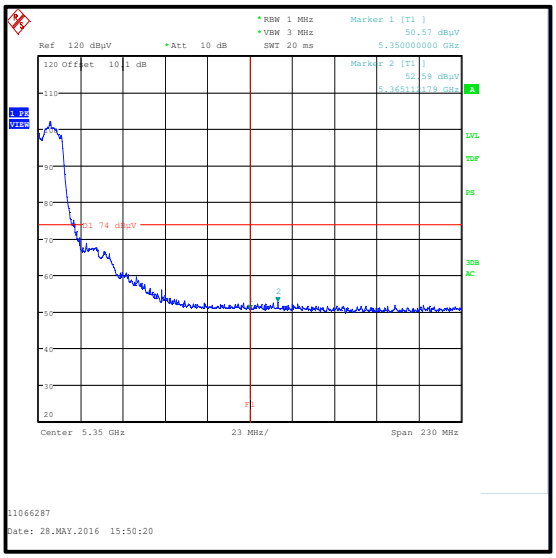
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	39.9	1.3	41.2	54.0	12.8	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11n / 40 MHz / 64QAM / MCS5

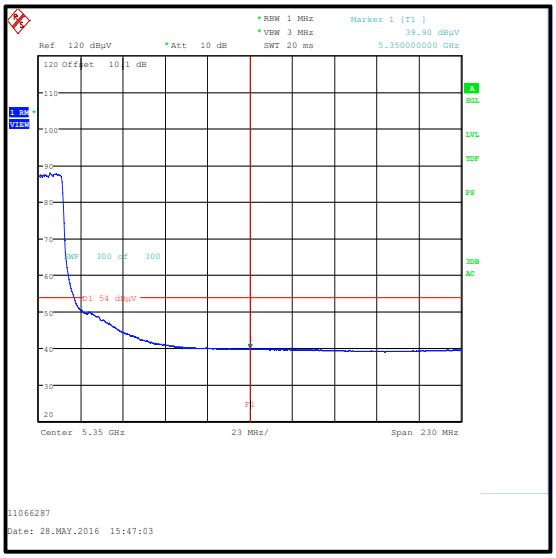


Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.9	74.0	9.1	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5127.564	49.0	2.5	51.5	54.0	2.5	Complied
5150	48.8	2.5	51.3	54.0	2.7	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Upper Band Edge / Peak

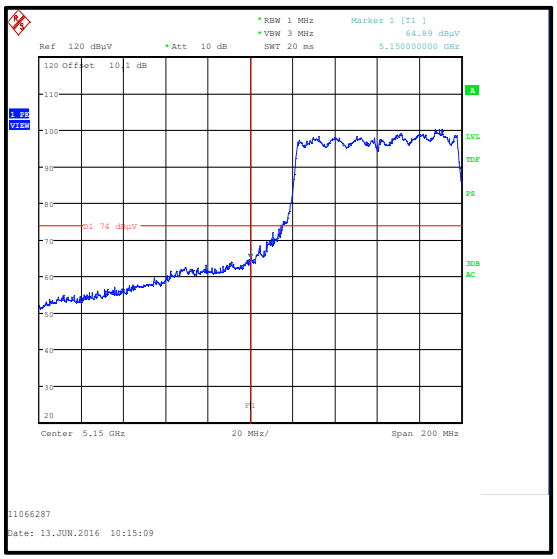
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	57.3	74.0	16.7	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Upper Band Edge / Average

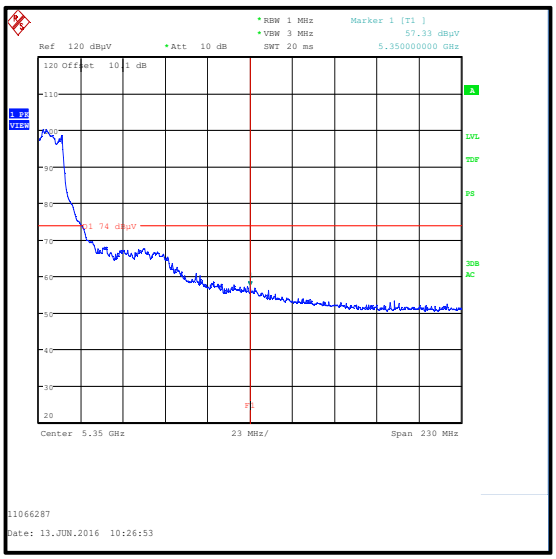
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	42.9	2.5	45.4	54.0	8.6	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

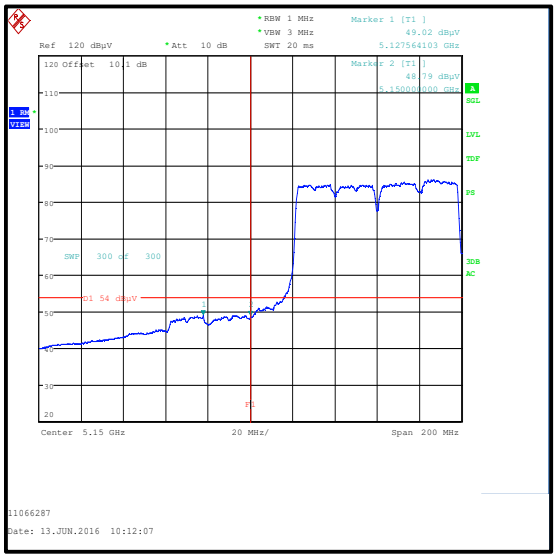
Results: 802.11ac / 80 MHz / 64QAM / MCS6x1



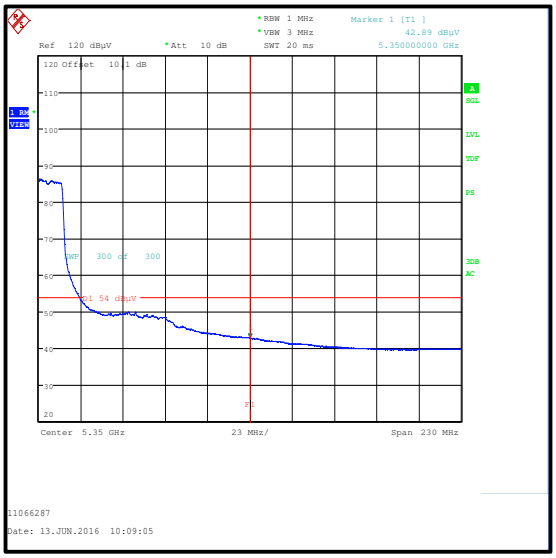
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	28 May 2016 & 13 June 2016
Test Sample IMEI:	357232070004146		

FCC Reference:	Parts 15.407(b)(2),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 Section II.G.

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	38 to 45

Note(s):

1. Band edge measurements were performed in the EUT modes that produce the highest power and the widest bandwidths. These modes were:
    - 802.11a – 16QAM / 36 Mbps
    - 802.11n HT20 – 16QAM / 39 Mbps / MCS4
    - 802.11n HT40 – BPSK / 13.5 Mbps / MCS0
    - 802.11n HT40 – 64QAM / 108 Mbps / MCS5
    - 802.11ac VHT80 – 64QAM / 263.3 Mbps / MCS6x1
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply. Tests were performed in these restricted bands of operation with the EUT transmitting on the bottom and top channels within 5.25-5.35 GHz band, the results are included in the transmitter 5.25-5.35 GHz band radiated spurious emissions section of this test report.
4. Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz. Field strength and EIRP results were found to be compliant with the restricted band limits and Part 15.407 out-of-band limits.
5. For all average measurements of this section, 300 sweeps were used. This satisfies the requirement for the minimum number of sweep points, as stated in KDB 789033 Section II.G.6.c) Method AD (vi). Power averaging was used.
6. In accordance with KDB 789033 Section II.G.6.c) Method AD (vii), for average measurements, data rates where the EUT was transmitting <98% duty cycle, the duty cycle correction factor calculated in section 5.2.4 of this test report was added to the measured result.

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	50.9	74.0	23.1	Complied

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	39.8	0.6	40.4	54.0	13.6	Complied

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Upper Band Edge / Peak

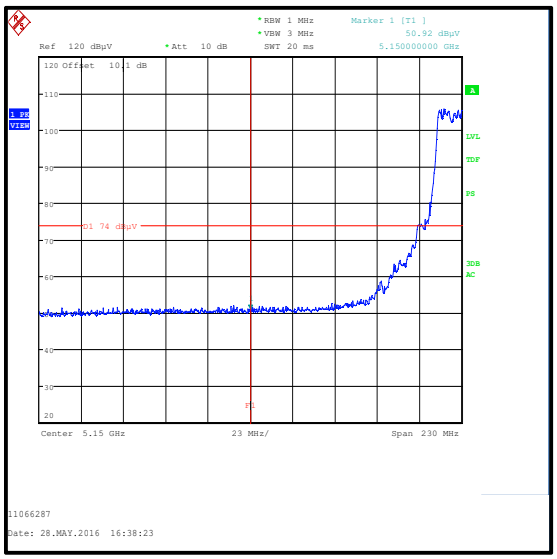
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	62.7	74.0	11.3	Complied
5350.801	63.5	74.0	10.5	Complied

Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Upper Band Edge / Average

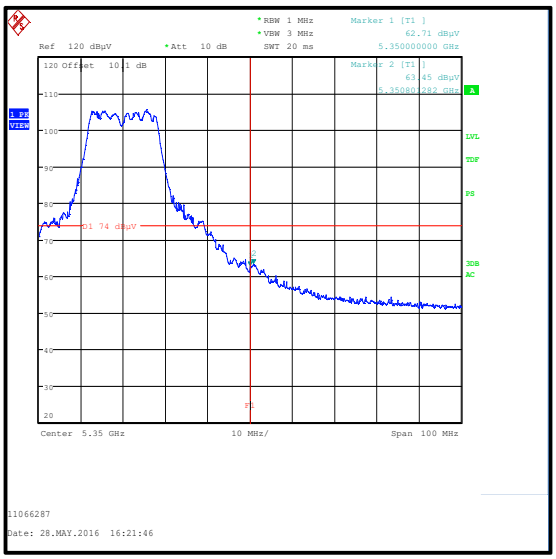
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	46.3	0.6	46.9	54.0	7.1	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

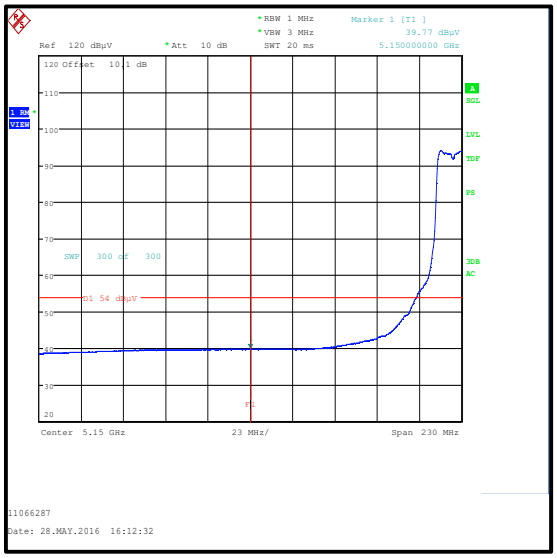
Results: 802.11a / 20 MHz / 16QAM / 36 Mbps



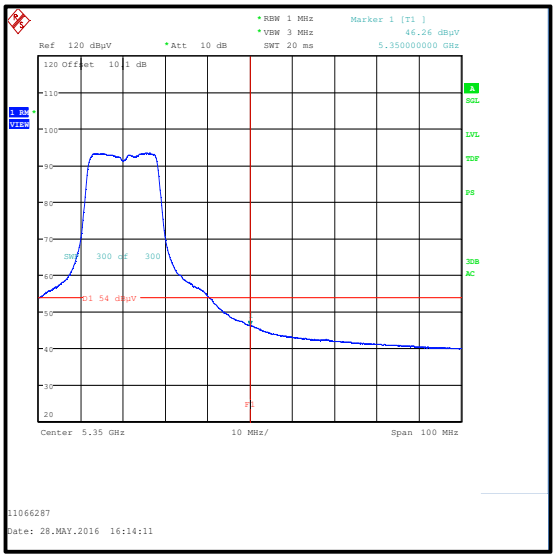
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	50.5	74.0	23.5	Complied

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	39.7	0.6	40.3	54.0	13.7	Complied

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Upper Band Edge / Peak

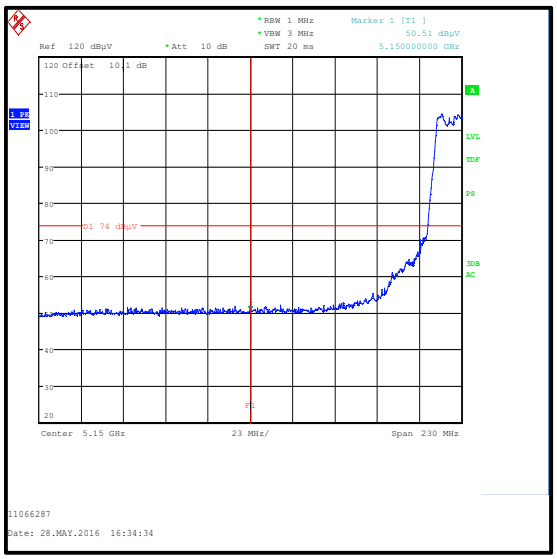
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	60.9	74.0	13.1	Complied

Results: 802.11n / 20 MHz / 16QAM / MCS4 / Upper Band Edge / Average

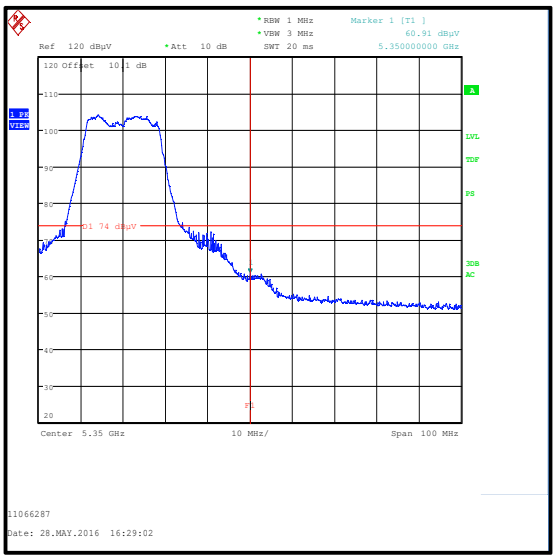
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	44.0	0.6	44.6	54.0	9.4	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

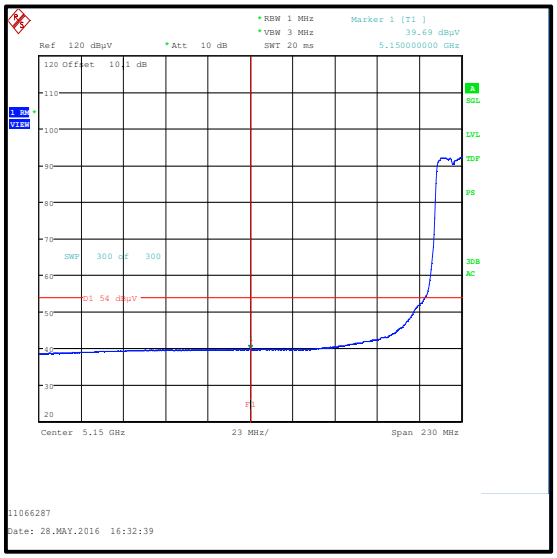
Results: 802.11n / 20 MHz / 16QAM / MCS4



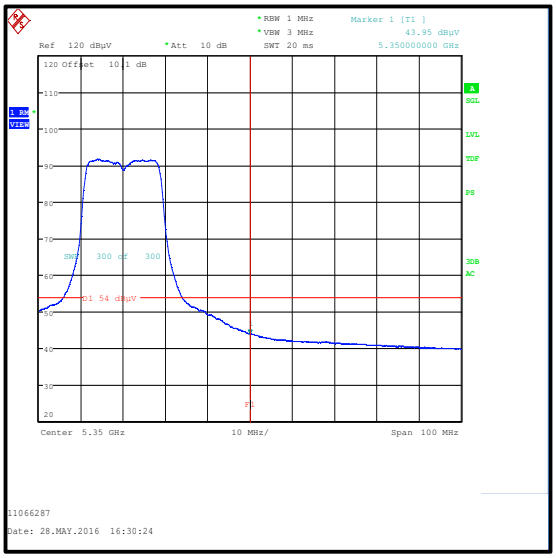
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5144.103	54.8	74.0	19.2	Complied
5150	54.1	74.0	19.9	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	39.8	0.2	40.0	54.0	14.0	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Upper Band Edge / Peak

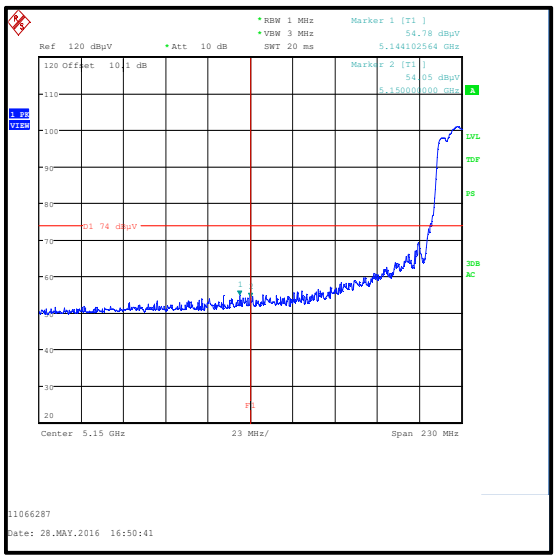
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	65.5	74.0	8.5	Complied
5350.962	66.0	74.0	8.0	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Upper Band Edge / Average

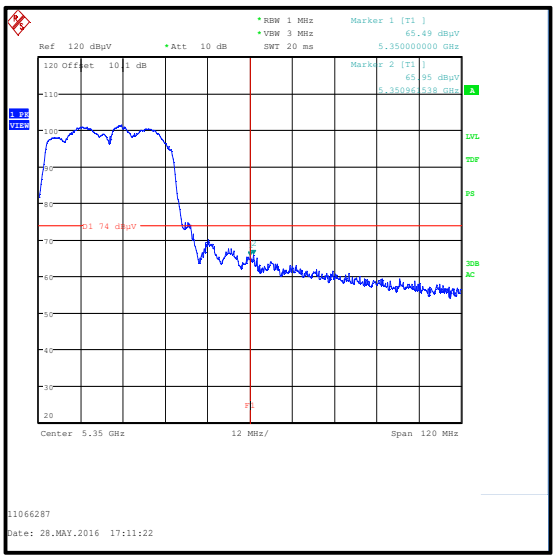
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	44.9	0.2	45.1	54.0	8.9	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

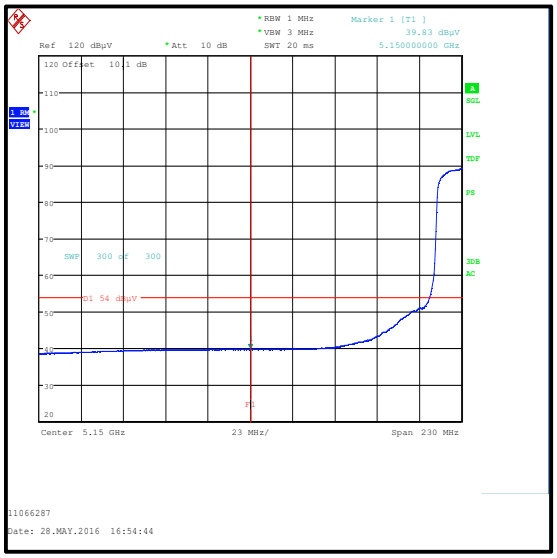
Results: 802.11n / 40 MHz / BPSK / MCS0



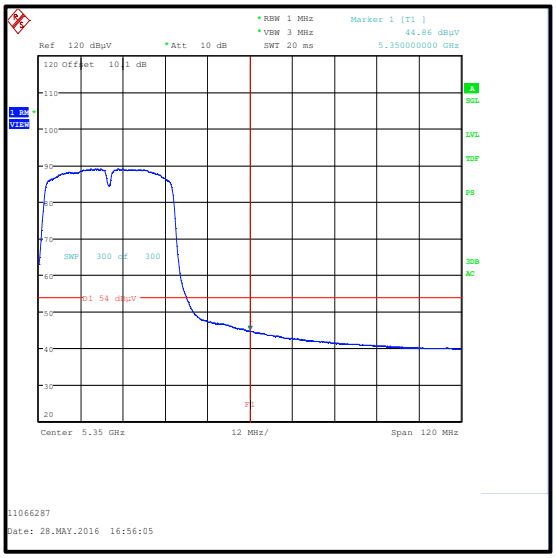
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	50.7	74.0	23.3	Complied

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	39.7	1.3	41.0	54.0	13.0	Complied

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Upper Band Edge / Peak

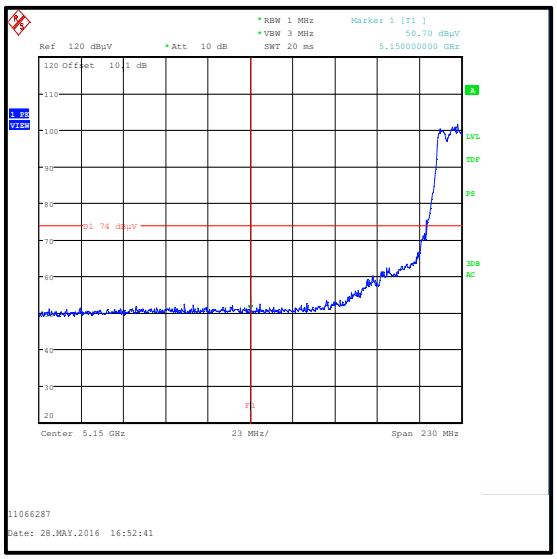
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	65.3	74.0	8.7	Complied
5350.962	66.3	74.0	7.7	Complied

Results: 802.11n / 40 MHz / 64QAM / MCS5 / Upper Band Edge / Average

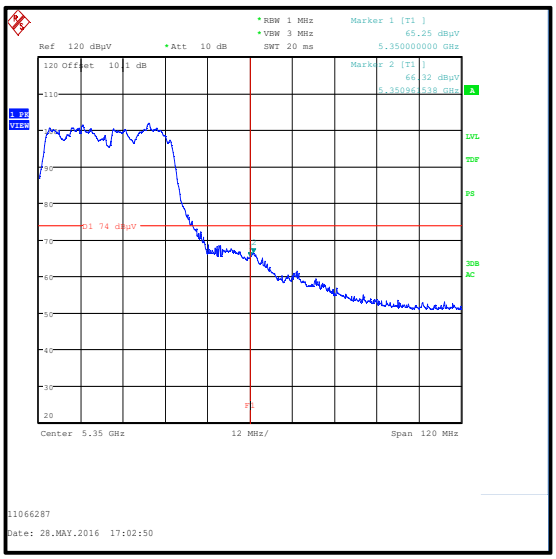
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	46.6	1.3	47.9	54.0	6.1	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

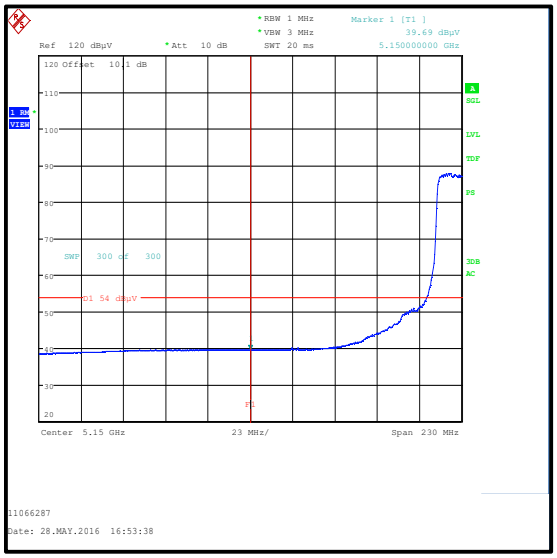
Results: 802.11n / 40 MHz / 64QAM / MCS5



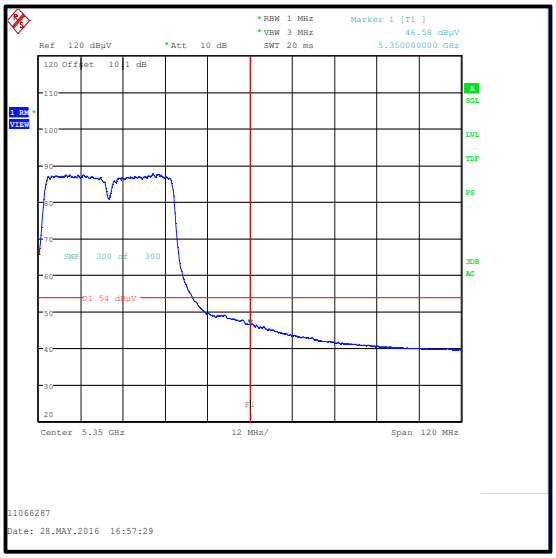
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Lower Band Edge / Peak

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5144.840	54.8	74.0	19.2	Complied
5150	53.5	74.0	20.5	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Lower Band Edge / Average

Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5147.051	41.5	2.5	44.0	54.0	10.0	Complied
5150	41.3	2.5	43.8	54.0	10.2	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Upper Band Edge / Peak

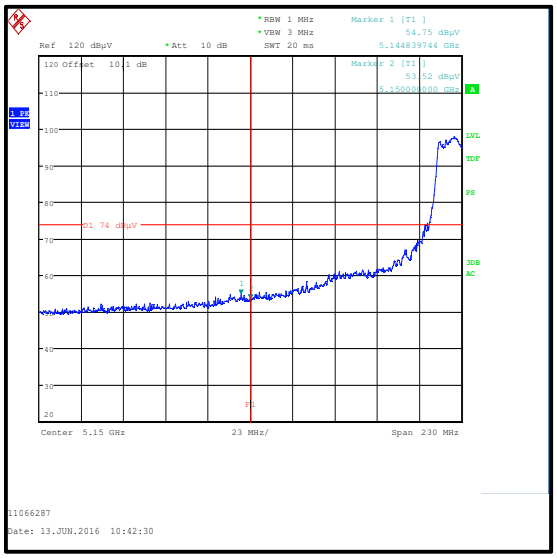
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	66.7	74.0	7.3	Complied
5362.532	67.4	74.0	6.6	Complied

Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Upper Band Edge / Average

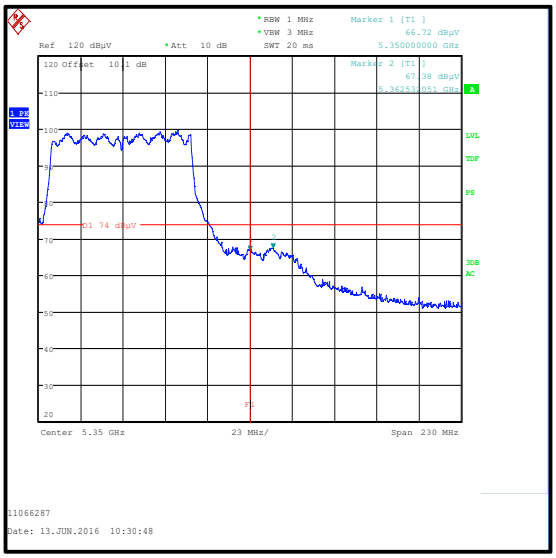
Frequency (MHz)	Level (dBµV/m)	Duty Cycle correction (dB)	Corrected Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5350	48.8	2.5	51.3	54.0	2.7	Complied
5352.949	49.1	2.5	51.6	54.0	2.4	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

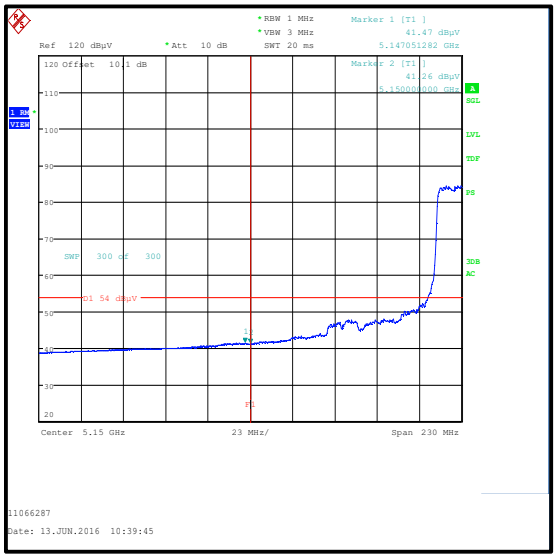
Results: 802.11ac / 80 MHz / 64QAM / MCS6x1



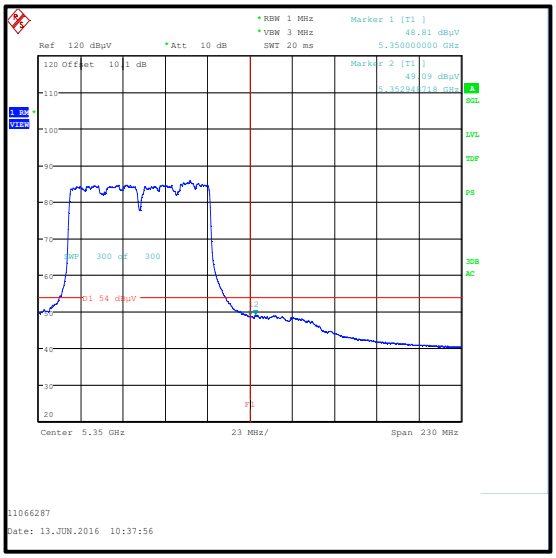
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	29 May 2016 & 13 June 2016
Test Sample IMEI:	357232070004146		

FCC Reference:	Parts 15.407(b)(3),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 Section II.G.

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	38 to 45

Note(s):

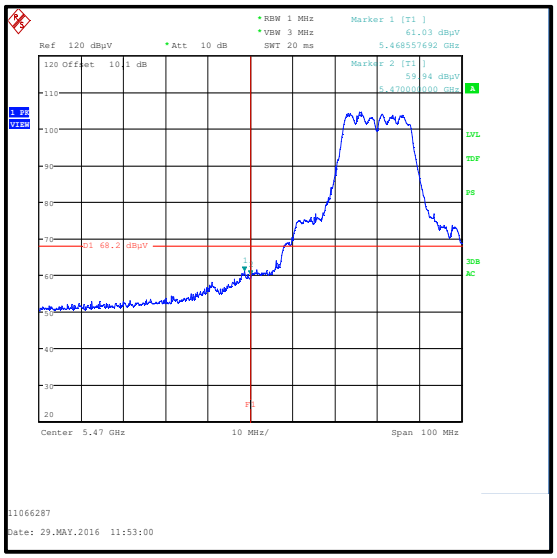
1. Band edge measurements were performed in the EUT modes that produce the highest power and the widest bandwidths. These modes were:
    - 802.11a – 16QAM / 36 Mbps
    - 802.11n HT20 – 16QAM / 39 Mbps / MCS4
    - 802.11n HT40 – BPSK / 13.5 Mbps / MCS0
    - 802.11n HT40 – 64QAM / 108 Mbps / MCS5
    - 802.11ac VHT80 – 64QAM / 263.3 Mbps / MCS6x1
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply. Tests were performed in these restricted bands of operation with the EUT transmitting on the bottom and top channels within 5.47-5.725 GHz band, the results are included in the transmitter 5.25-5.35 GHz band radiated spurious emissions section of this test report.
4. For completeness, results are also shown as EIRP in dBm and also as field strength in dBµV/m. Measured field strength was converted to EIRP in accordance with KDB 789033 II.G.2.d.(iii) using a conversion factor of 95.2.

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

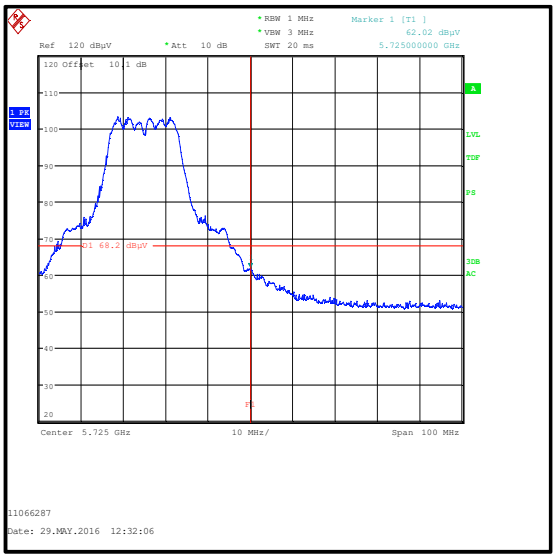
Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5468.558	-34.2	-27.0	7.2	Complied
5470	-35.3	-27.0	8.3	Complied
5725	-33.2	-27.0	6.2	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5468.558	61.0	68.2	7.2	Complied
5470	59.9	68.2	8.3	Complied
5725	62.0	68.2	6.2	Complied



Lower Band Edge Measurement



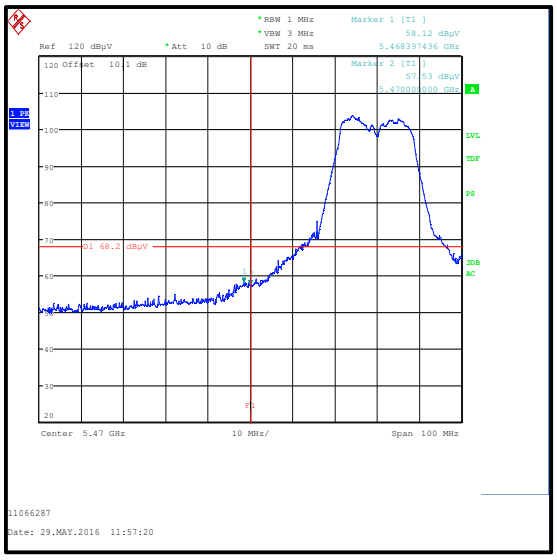
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

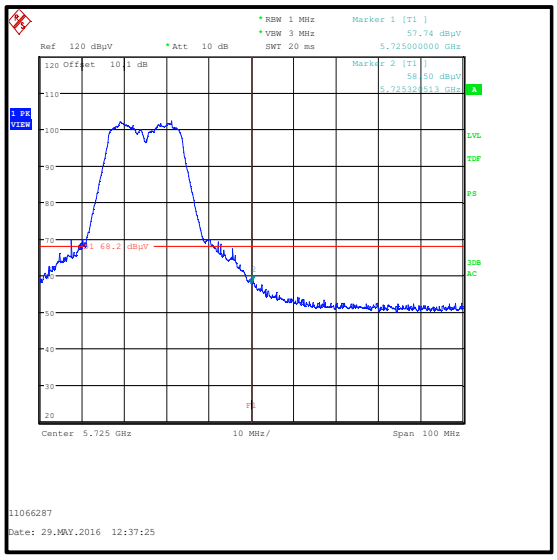
Results: 802.11n / 20 MHz / 16QAM / MCS4 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5468.397	-37.1	-27.0	10.1	Complied
5470	-37.7	-27.0	10.7	Complied
5725	-37.5	-27.0	10.5	Complied
5725.321	-36.7	-27.0	9.7	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5468.397	58.1	68.2	10.1	Complied
5470	57.5	68.2	10.7	Complied
5725	57.7	68.2	10.5	Complied
5725.321	58.5	68.2	9.7	Complied



Lower Band Edge Measurement



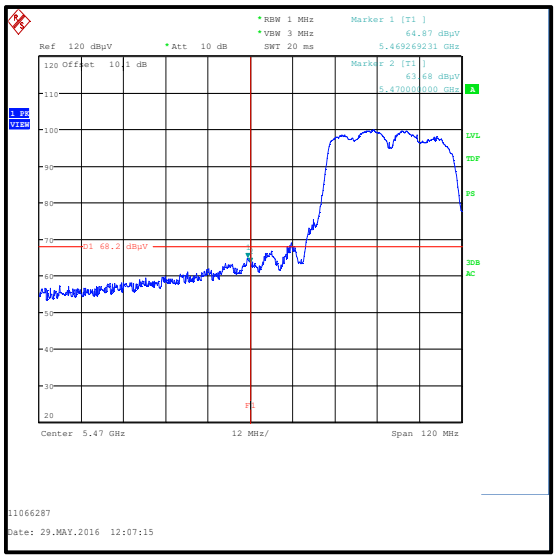
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

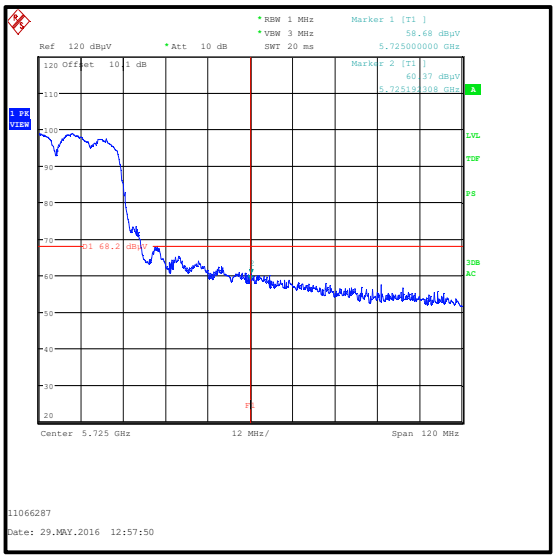
Results: 802.11n / 40 MHz / BPSK / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5469.269	-30.3	-27.0	3.3	Complied
5470	-31.5	-27.0	4.5	Complied
5725	-36.5	-27.0	9.5	Complied
5725.192	-34.8	-27.0	7.8	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5469.269	64.9	68.2	3.3	Complied
5470	63.7	68.2	4.5	Complied
5725	58.7	68.2	9.5	Complied
5725.192	60.4	68.2	7.8	Complied



Lower Band Edge Measurement



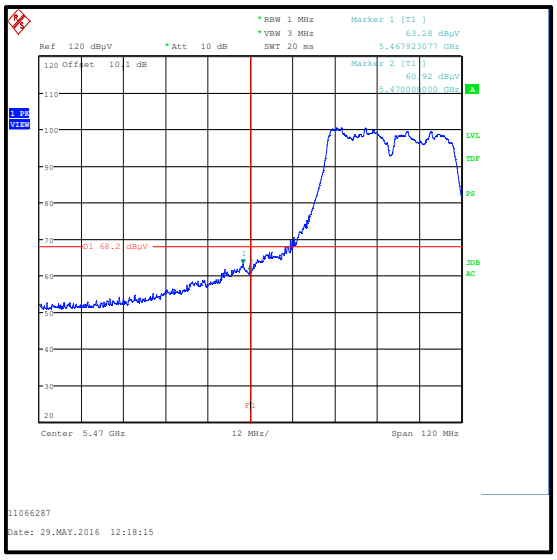
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

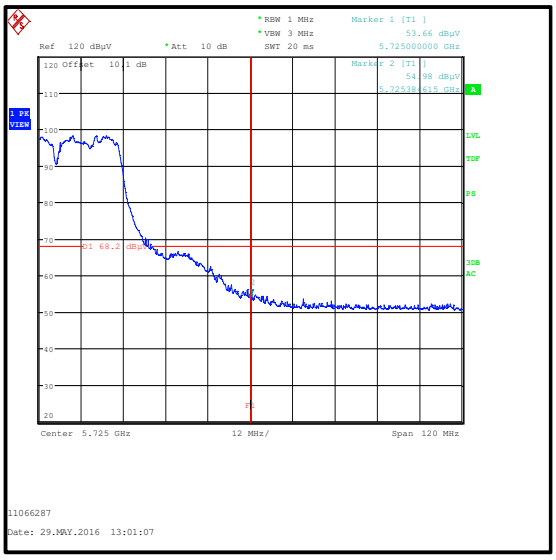
Results: 802.11n / 40 MHz / 64QAM / MCS5 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5467.923	-31.9	-27.0	4.9	Complied
5470	-34.3	-27.0	7.3	Complied
5725	-41.5	-27.0	14.5	Complied
5725.385	-40.2	-27.0	13.2	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5467.923	63.3	68.2	4.9	Complied
5470	60.9	68.2	7.3	Complied
5725	53.7	68.2	14.5	Complied
5725.385	55.0	68.2	13.2	Complied



Lower Band Edge Measurement



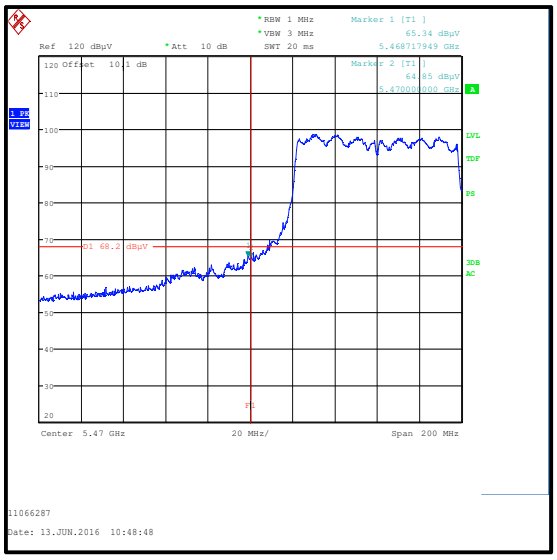
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

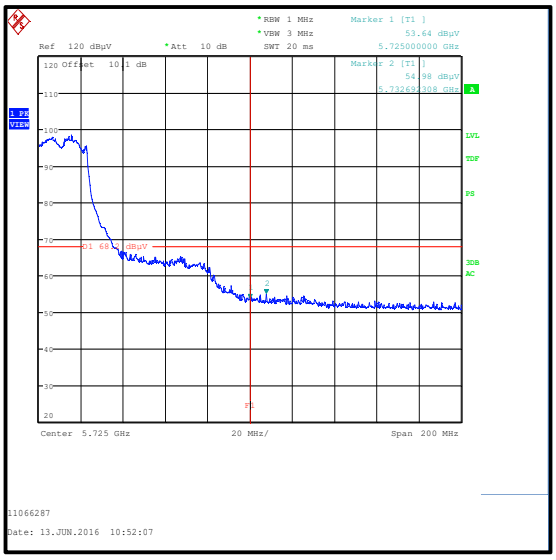
Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5468.718	-29.9	-27.0	2.9	Complied
5470	-30.3	-27.0	3.3	Complied
5725	-41.6	-27.0	14.6	Complied
5732.692	-40.2	-27.0	13.2	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5468.718	65.3	68.2	2.9	Complied
5470	64.9	68.2	3.3	Complied
5725	53.6	68.2	14.6	Complied
5732.692	55.0	68.2	13.2	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band)

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	29 May 2016 & 13 June 2016
Test Sample IMEI:	357232070004146		

FCC Reference:	Parts 15.407(b)(4),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 Section II.G.

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	38 to 45

Note(s):

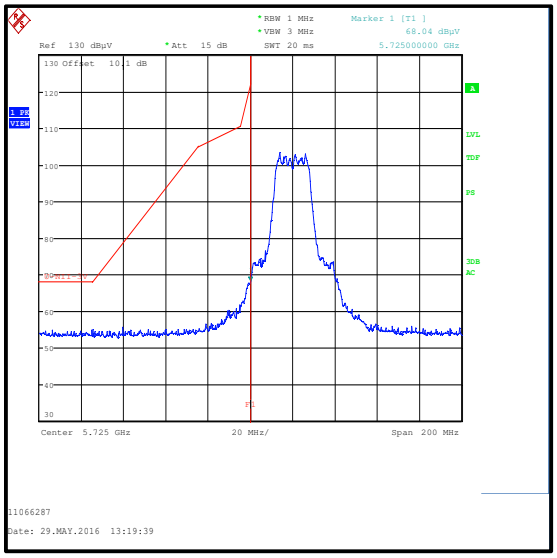
1. Band edge measurements were performed in the EUT modes that produce the highest power and the widest bandwidths. The modes that produced the highest power and widest bandwidth were:
    - 802.11a – 16QAM / 36 Mbps
    - 802.11n HT20 – 16QAM / 39 Mbps / MCS4
    - 802.11n HT40 – BPSK / 13.5 Mbps / MCS0
    - 802.11n HT40 – 64QAM / 108 Mbps / MCS5
    - 802.11ac VHT80 – 64QAM / 263.3 Mbps / MCS6x1
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For completeness, results are also shown as EIRP in dBm and also as field strength in dBµV/m. Measured field strength was converted to EIRP in accordance with KDB 789033 G.2.d)(iii) using a conversion factor of 95.2.

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

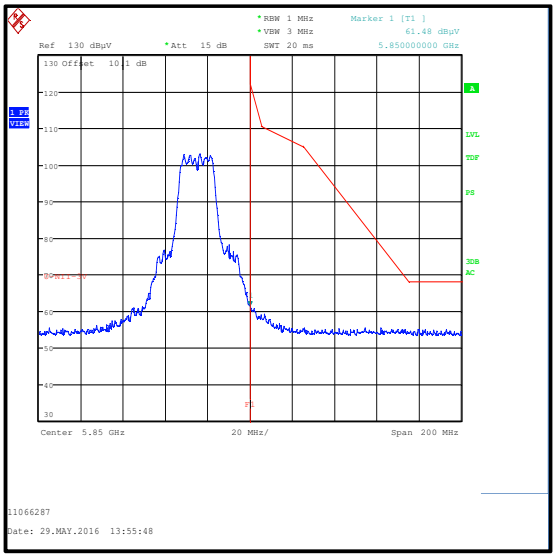
Results: 802.11a / 20 MHz / 16QAM / 36 Mbps / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5725	-27.2	27.0	54.2	Complied
5850	-33.7	27.0	60.7	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5725	68.0	122.2	54.2	Complied
5850	61.5	122.2	60.7	Complied



Lower Band Edge Measurement



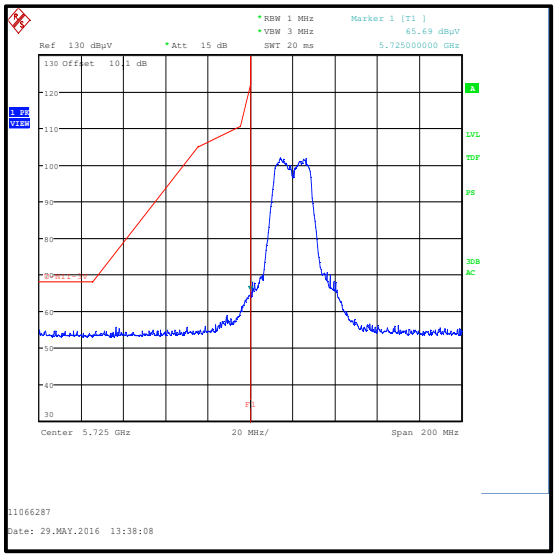
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

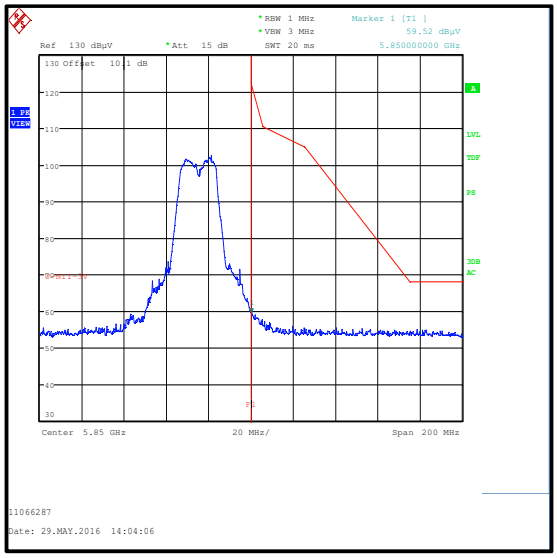
Results: 802.11n / 20 MHz / 16QAM / MCS4 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5725	-29.5	27.0	56.5	Complied
5850	-35.7	27.0	62.7	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5725	65.7	122.2	56.5	Complied
5850	59.5	122.2	62.7	Complied



Lower Band Edge Measurement



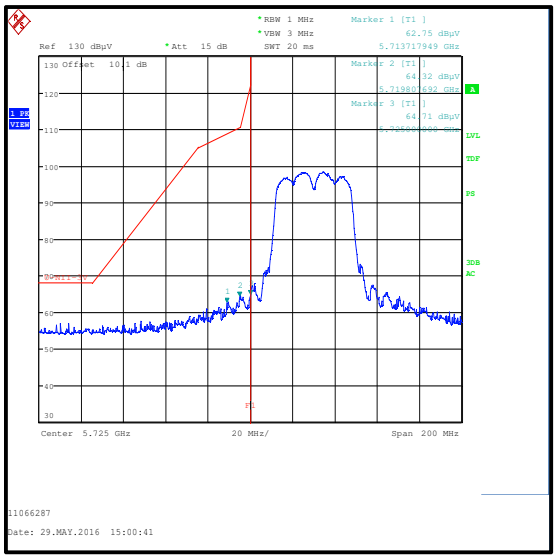
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

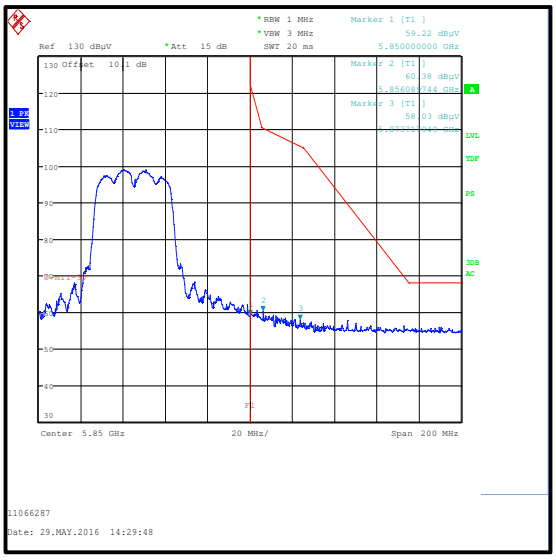
Results: 802.11n / 40 MHz / BPSK / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5713.718	-32.4	13.8	46.2	Complied
5725	-30.5	27.0	57.5	Complied
5850	-36.0	27.0	63.0	Complied
5873.718	-37.2	10.4	47.6	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5713.718	62.8	109.0	46.2	Complied
5725	64.7	122.2	57.5	Complied
5850	59.2	122.2	63.0	Complied
5873.718	58.0	105.6	47.6	Complied



Lower Band Edge Measurement



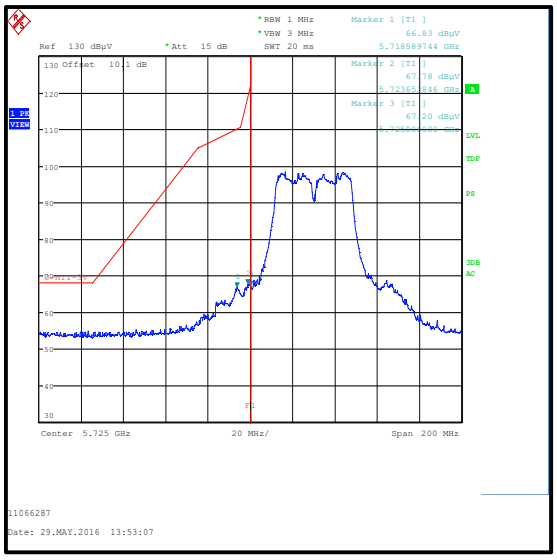
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

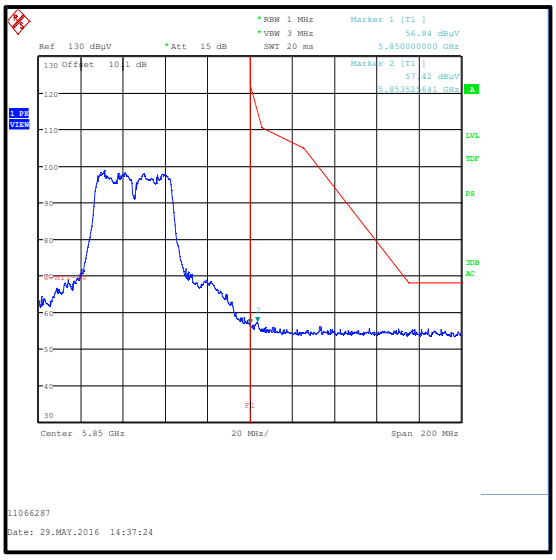
Results: 802.11n / 40 MHz / 64QAM / MCS5 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5718.590	-28.4	15.2	43.6	Complied
5725	-28.0	27.0	55.0	Complied
5850	-38.4	27.0	65.4	Complied
5853.526	-37.8	19.0	56.8	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5718.590	66.8	110.4	43.6	Complied
5725	67.2	122.2	55.0	Complied
5850	56.8	122.2	65.4	Complied
5853.526	57.4	114.2	56.8	Complied



Lower Band Edge Measurement



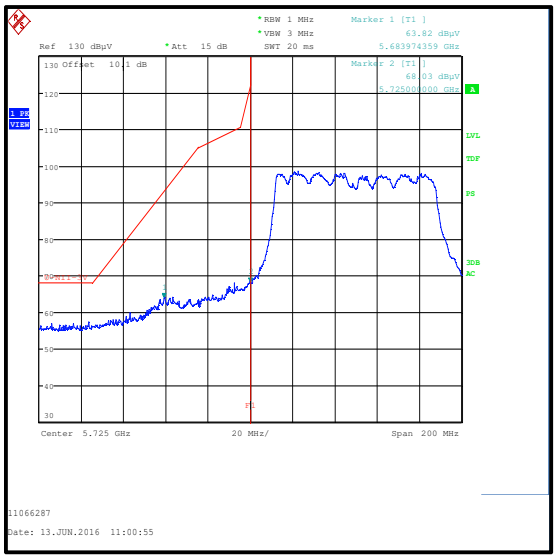
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

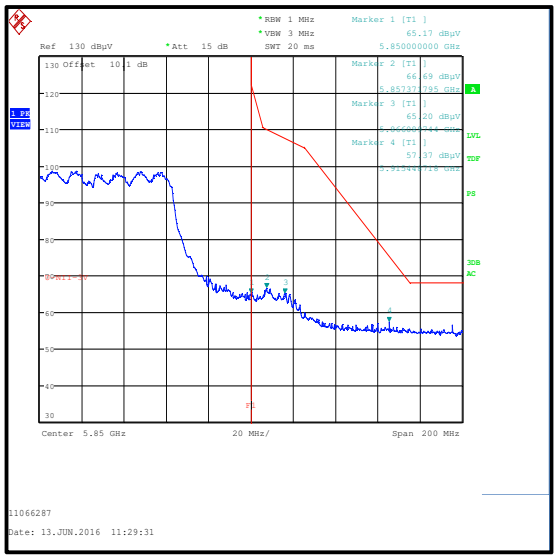
Results: 802.11ac / 80 MHz / 64QAM / MCS6x1 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5683.974	-31.4	-1.9	29.5	Complied
5725	-27.2	27.0	54.2	Complied
5850	-30.0	27.0	57.0	Complied
5915.449	-37.8	-19.9	17.9	Complied

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5683.974	63.8	93.3	29.5	Complied
5725	68.0	122.2	54.2	Complied
5850	65.2	122.2	57.0	Complied
5915.449	57.4	75.3	17.9	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1656	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	02 Apr 2017	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	21 Dec 2016	12
M1886	Test Receiver	Rohde & Schwarz	ESU26	100554	21 Mar 2017	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	19 Dec 2016	12
A253	Antenna	Flann Microwave	12240-20	128	17 Dec 2016	12
A1396	Attenuator	Huber & Suhner	6810.17.B	757987	26 Apr 2017	12

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±4.69 dB
Maximum Conducted Output Power	5.15 GHz to 5.850 GHz	95%	±1.13 dB
Maximum Power Spectral Density	5.15 GHz to 5.850 GHz	95%	±1.13 dB
Minimum 6 dB Emission Bandwidth	5.15 GHz to 5.850 GHz	95%	±4.59 %
26 dB Emission Bandwidth	5.15 GHz to 5.850 GHz	95%	±4.59 %
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±5.65 dB
Radiated Spurious Emissions	1 GHz to 40 GHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

7. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	-	-	Initial Version

--- END OF REPORT ---